

**APPENDIX**  
**EXHIBITS (Pages 1-480)**

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**Supreme Court of the United States**

OCTOBER TERM, 1973

No. 72-402

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UNITED STATES OF AMERICA,

*Appellant*

—v.—

GENERAL DYNAMICS CORPORATION, THE UNITED  
ELECTRIC COAL COMPANIES, and FREEMAN  
COAL MINING CORPORATION

---

ON APPEAL FROM THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF ILLINOIS

---

JURISDICTIONAL STATEMENT FILED SEPTEMBER 8, 1972  
PROBABLE JURISDICTION NOTED DECEMBER 11, 1972



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GX 1

## Annual Report of General Dynamics Corporation 1960

GENERAL DYNAMICS CORPORATION AND SUBSIDIARIES

## CONSOLIDATED BALANCE SHEET

## Assets

1960

1959

## CURRENT ASSETS:

Cash .....	\$ 51,009,386	\$ 66,301,747
Marketable securities, at cost .....	2,173,470	3,348,683
Accounts receivable—United States and Canadian Governments .....	24,583,768	30,103,321
Other trade receivables, less reserves .....	72,650,254	51,618,615
Refundable United States income taxes .....	25,300,000	—
Unreimbursed expenditures and estimated profits principally on aircraft and ship contracts in process .....	293,850,589	279,635,448
Inventories, at the lower of cost or market, less advance and progress payments .....	210,951,825	205,586,099
Prepaid expenses .....	5,446,841	3,538,522
Total current assets .....	<u>\$826,165,733</u>	<u>\$840,145,435</u>

## OTHER ASSETS:

Investments (at cost) and advances, including unconsolidated subsidiaries of \$3,973,413 in 1960 and \$3,947,276 in 1959 .....	\$ 15,398,525	\$ 14,519,193
Receivables not currently due and other assets including used aircraft (at cost less reserves) .....	9,363,979	23,716,878
	<u>\$ 24,762,504</u>	<u>\$ 38,236,071</u>

## PROPERTY, PLANT AND EQUIPMENT, at cost:

Land and buildings .....	\$129,999,721	\$123,890,642
Machinery and equipment .....	232,228,643	204,063,238
	<u>\$362,228,364</u>	<u>\$327,953,880</u>
Less—Depreciation, amortization and depletion .....	170,768,853	145,031,137
	<u>\$191,459,511</u>	<u>\$182,912,743</u>
	<u>\$342,387,748</u>	<u>\$381,294,249</u>

The accompanying notes are an integral part of the above statement.

## GENERAL DYNAMICS CORPORATION AND SUBSIDIARIES

**STATEMENT OF CONSOLIDATED INCOME**  
**FOR THE YEARS ENDED DECEMBER 31, 1960 AND 1959**

	1960	1959
NET SALES .....	\$1,987,748,715	\$1,811,871,304
COST OF SALES .....	<u>2,041,097,987</u>	<u>1,754,948,587</u>
Profit (loss) from operations .....	<u>(\$ 53,349,272)</u>	<u>\$ 56,922,797</u>
OTHER INCOME (EXPENSE):		
Interest-net .....	<u>(\$ 12,541,658)</u>	<u>(\$ 6,205,385)</u>
Miscellaneous-net .....	<u>4,120,079</u>	<u>3,438,657</u>
	<u>(\$ 8,421,579)</u>	<u>(\$ 2,766,728)</u>
Profit (loss) before income taxes .....	<u>(\$ 61,770,851)</u>	<u>\$ 54,156,069</u>
PROVISION (CREDIT) FOR UNITED STATES AND		
CANADIAN INCOME TAXES .....	<u>( 34,715,000)</u>	<u>23,100,000</u>
Net income (loss) .....	<u>(\$ 27,055,851)</u>	<u>\$ 31,056,069</u>

The accompanying notes are an integral part of the above statement.

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## GX 2 Annual Report of General Dynamics Corporation 1961

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GENERAL DYNAMICS CORPORATION AND SUBSIDIARIES

## CONSOLIDATED BALANCE SHEET

Assets	1961	1960
<b>CURRENT ASSETS:</b>		
Cash .....	\$ 54,307,554	\$ 51,005,986
Marketable securities, at cost .....	4,972,472	2,173,470
Accounts receivable—United States and Canadian Governments .....	31,513,107	34,583,788
Other trade receivables, less reserves .....	75,948,074	72,860,254
Refundable United States income taxes .....	38,227,375	25,300,000
Unreimbursed expenditures and estimated profits on cost reimbursement and long-term contracts in process .....	220,910,104	233,950,589
Inventories, at the lower of cost or market, less advance and progress payments .....	175,870,480	285,005,204
Prepaid expenses .....	4,115,205	5,448,841
Total current assets .....	<u>\$297,285,941</u>	<u>\$701,241,012</u>
<b>OTHER ASSETS:</b>		
Investments (at cost) and advances, including unconsolidated subsidiaries of \$4,618,370 in 1961 and \$2,973,419 in 1960 .....	\$ 13,007,539	\$ 15,286,535
Receivables not currently due and other assets .....	<u>13,280,850</u>	<u>5,265,978</u>
	<u>\$ 26,288,389</u>	<u>\$ 20,552,513</u>
<b>PROPERTY, PLANT AND EQUIPMENT:</b>		
Land and buildings, at cost .....	\$140,945,705	\$128,908,721
Machinery and equipment, at cost .....	248,755,485	232,228,643
	<u>\$389,701,191</u>	<u>\$361,137,364</u>
Less—Depreciation, amortization and depletion .....	197,879,711	170,765,883
	<u>\$191,821,480</u>	<u>\$190,371,481</u>
	<u>\$197,821,480</u>	<u>\$170,765,883</u>

The accompanying notes are an integral part of the above statement.

## GENERAL DYNAMICS CORPORATION AND SUBSIDIARIES

STATEMENT OF CONSOLIDATED INCOME  
FOR THE YEARS ENDED DECEMBER 31, 1961 AND 1960

	1961	1960
<b>NET SALES</b> .....	\$2,062,377,998	\$1,987,748,715
<b>COST OF SALES</b> , including losses (unrecoverable costs) on commercial jet transport program of \$214,488,000 in 1961 and \$167,184,000 in 1960 .....	2,220,150,110	2,041,097,987
Loss from operations .....	\$ 157,772,112	\$ 53,340,272
<b>OTHER EXPENSE (INCOME):</b>		
Interest-net .....	\$ 12,900,570	\$ 12,541,658
Miscellaneous-net .....	( 2,605,926)	( 4,120,079)
	\$ 10,294,742	\$ 8,421,579
Loss before income taxes .....	\$ 168,066,854	\$ 61,770,851
<b>CREDIT (PROVISION) FOR UNITED STATES AND CANADIAN INCOME TAXES:</b>		
Credit applicable to General Dynamics Corporation resulting from loss carryback. \$	28,227,275	\$ 36,948,901
Provision applicable to profits of subsidiaries consolidated .....	( 3,363,680)	( 2,233,901)
	\$ 24,863,595	\$ 34,715,000
<b>Net loss</b> .....	\$ 143,203,459	\$ 27,055,851

The accompanying notes are an integral part of the above statement.

\* \* \*

## GX 3 Annual Report of General Dynamics Corporation 1962

\* \* \*

GENERAL DYNAMICS CORPORATION AND SUBSIDIARIES

## CONSOLIDATED BALANCE SHEET

Assets	1962	1961
<b>CURRENT ASSETS:</b>		
Cash	\$ 35,423,469	\$ 56,307,554
Marketable securities, at cost	9,620,912	4,372,472
Accounts receivable - United States and Canadian Governments	21,193,807	31,513,107
Other trade receivables, less reserves	66,697,118	75,949,074
Refundable United States income taxes	-	28,227,275
Unreimbursed expenditures and estimated profits on cost reimbursement and long-term contracts in process	187,704,789	220,910,194
Inventories, at the lower of cost or market, less advance and progress payments	138,040,674	175,870,460
Prepaid expenses	4,795,436	4,115,205
Total current assets	<u>\$463,476,205</u>	<u>\$597,265,341</u>
<b>OTHER ASSETS:</b>		
Investments (at cost) and advances, including unconsolidated subsidiaries of \$4,536,370 in 1962 and \$4,616,370 in 1961	\$ 12,916,212	\$ 13,007,639
Receivables not currently due and other assets, less reserves	8,489,985	13,260,850
	<u>\$ 21,406,197</u>	<u>\$ 26,268,489</u>
<b>PROPERTY, PLANT AND EQUIPMENT:</b>		
Land and buildings, at cost	\$141,638,816	\$140,946,706
Machinery and equipment, at cost	264,893,877	249,756,465
	<u>\$406,532,693</u>	<u>\$390,703,171</u>
Less-Reserves for depreciation, etc.	235,743,355	197,879,711
	<u>\$170,789,338</u>	<u>\$192,823,460</u>
	<u>\$655,671,740</u>	<u>\$816,357,290</u>

The accompanying notes are an integral part of the above statements.

\* \* \*

## GX 4 Annual Report of General Dynamics Corporation 1963

GENERAL DYNAMICS CORPORATION  
AND SUBSIDIARIES

## CONSOLIDATED BALANCE SHEET DECEMBER 31, 1963 AND 1962

Assets	1963	1962
<b>CURRENT ASSETS:</b>		
Cash .....	\$ 36,600,900	\$ 35,423,460
Marketable securities, at cost .....	9,380,656	9,620,912
Accounts receivable—United States and Canadian Governments .....	18,725,394	21,193,807
Other trade receivables, less reserves .....	57,796,980	66,697,118
Unreimbursed expenditures and estimated profits on cost reimbursement and long-term contracts in process (Note 3) .....	156,590,280	187,704,789
Inventories, at the lower of cost or market, less advance and progress payments .....	134,544,485	136,040,674
Prepaid expenses .....	4,346,366	4,795,436
Total current assets .....	<u>\$418,988,701</u>	<u>\$463,476,206</u>
<b>OTHER ASSETS:</b>		
Investments (at cost) and advances, including unconsolidated subsidiaries of \$4,902,153 in 1963 and \$4,536,370 in 1962 (Note 7) .....	\$ 8,820,192	\$ 12,916,212
Receivables not currently due and other assets, less reserves .....	8,436,121	8,489,985
	<u>\$ 17,256,313</u>	<u>\$ 21,406,197</u>
<b>PROPERTY, PLANT AND EQUIPMENT (Note 8):</b>		
Land and buildings, at cost .....	\$148,847,504	\$141,638,816
Machinery and equipment, at cost .....	329,472,919	294,893,577
	<u>\$478,320,423</u>	<u>\$406,532,693</u>
Less—Reserves for depreciation, etc. ....	286,217,747	235,743,355
	<u>\$190,102,676</u>	<u>\$170,789,338</u>
	<u>\$626,147,680</u>	<u>\$665,671,740</u>

The accompanying notes are an integral part of the above statement.

## GX 5 Annual Report of General Dynamics Corporation 1964

\* \* \*

## CONSOLIDATED BALANCE SHEET December 31, 1964 and 1963

Assets	1964	1963
<b>Current Assets:</b>		
Cash .....	\$ 33,849,501	\$ 36,600,960
Marketable securities, at cost .....	28,917,406	9,380,656
Accounts receivable—United States and Canadian Governments .....	12,092,289	19,725,394
Other trade receivables, less reserves .....	74,959,608	57,799,980
Unreimbursed expenditures and estimated profits on cost reimbursement and long-term contracts in process (Note 1) .....	136,008,996	156,590,280
Inventories, at the lower of cost or market, less advance and progress payments .....	116,610,178	134,544,465
Prepaid expenses .....	4,303,200	4,346,966
<b>Total current assets .....</b>	<b>\$407,141,178</b>	<b>\$418,988,701</b>
<b>Other Assets:</b>		
Investments (at cost) and advances, including unconsolidated subsidiaries of \$4,981,230 in 1964 and \$4,902,153 in 1963 (Note 6) .....	\$ 8,792,302	\$ 8,620,192
Receivables not currently due and other assets, less reserves .....	14,236,249	8,436,121
	<u>\$ 23,028,551</u>	<u>\$ 17,056,313</u>
<b>Property, Plant and Equipment (Note 7):</b>		
Land and buildings, at cost .....	\$154,524,777	\$148,847,504
Machinery and equipment, at cost .....	350,501,808	329,472,919
	<u>\$505,026,585</u>	<u>\$478,320,423</u>
Less—Reserves for depreciation, etc. ....	312,140,466	288,217,747
	<u>\$192,886,119</u>	<u>\$190,102,676</u>
	<u>\$623,055,843</u>	<u>\$626,147,690</u>

The accompanying notes are an integral part of the above statement.

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## GX 6 Annual Report of General Dynamics Corporation 1965

\* \* \*

## Consolidated Balance Sheet December 31, 1965 and 1964

Assets	1965	1964
<b>Current Assets:</b>		
Cash .....	\$ 14,553,533	\$ 33,849,301
Marketable securities, at cost .....	8,415,627	28,917,408
Accounts receivable - United States and Canadian Governments .....	22,562,514	12,092,289
Other trade receivables, less reserves .....	85,770,215	74,959,608
Unreimbursed expenditures and estimated profits on cost reimbursement and long-term contracts in process (Note 1) .....	136,700,014	136,408,996
Inventories, at the lower of cost or market, less advance and progress payments .....	155,460,411	116,610,178
Prepaid expenses .....	5,920,741	4,303,200
Total current assets .....	<u>\$429,383,055</u>	<u>\$407,141,178</u>
<b>Other Assets:</b>		
Investments in and advances to unconsolidated subsidiaries (Note 5) .....	\$ 12,371,487	\$ 4,981,250
Receivables not currently due and other assets .....	18,511,400	18,047,301
	<u>\$ 30,882,887</u>	<u>\$ 23,028,551</u>
<b>Property, Plant and Equipment (Note 6):</b>		
Land and buildings, at cost .....	\$155,960,368	\$154,524,777
Machinery and equipment, at cost .....	366,159,006	350,501,808
	<u>\$542,119,374</u>	<u>\$505,026,585</u>
Less - Reserves for depreciation, etc. ....	331,959,343	312,140,466
	<u>\$210,160,031</u>	<u>\$192,886,119</u>
	<u>\$670,425,973</u>	<u>\$623,055,848</u>

The accompanying notes are an integral part of the above statement.

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\* \* \*



## Annual Report of General Dynamics Corporation 1966

\* \* \*

## Consolidated Balance Sheet December 31, 1966 and 1965

Assets	1966	1965
<b>Current Assets:</b>		
Cash	\$ 16,280,552	\$ 14,553,533
Marketable securities, at cost	2,307,155	8,445,627
Accounts receivable—United States and Canadian Governments	38,326,599	22,562,514
Other trade receivables, less reserves	76,751,642	85,770,215
Unreimbursed expenditures and estimated profits on cost reimbursement and long-term contracts in process (Note 1)	181,192,092	136,700,014
Inventories, at the lower of cost or market, less advance and progress payments	137,565,138	155,460,411
Prepaid expenses	5,879,986	5,920,741
Total current assets	<u>\$458,303,564</u>	<u>\$429,383,053</u>
<b>Other Assets:</b>		
Equity in net assets of unconsolidated subsidiaries (Note 5)	\$ 13,018,123	\$ 12,371,487
Receivables not currently due and other assets	24,459,928	18,511,400
	<u>\$ 37,478,051</u>	<u>\$ 30,882,887</u>
<b>Property, Plant and Equipment (Note 6):</b>		
Land and buildings, at cost	\$167,616,215	\$155,960,368
Machinery and equipment, at cost	429,698,744	386,159,006
	<u>\$597,314,959</u>	<u>\$542,119,374</u>
Less—Reserves for depreciation, etc.	359,760,529	331,939,343
	<u>\$237,554,430</u>	<u>\$210,160,031</u>
	<u>\$733,336,045</u>	<u>\$670,425,973</u>

The accompanying notes are an integral part of the above statement.

\* \* \*

THE UNITED ELECTRIC COAL COMPANIES FIXED ASSETS, LONG-TERM INDEBTEDNESS, WORKING CAPITAL  
AND NET ASSETS OR STOCKHOLDERS' EQUITY 1940-1967

GOVERNMENT  
EXEMPT

Fiscal Year Ending or Period Ending	Coal Lands, Plant and Equipment, Less Reserves for Depreciation and Depletion	Long-Term Indebtedness	Working Capital	Net Assets or Stockholders' Equity
1940	7,568,444	2,435,978	479,520	6,220,708
1941	8,621,986	2,325,574	317,654	6,415,729
1942	8,232,506	1,332,925	522,104	7,149,970
1943	7,804,045	452,502	723,245	7,092,886
1944	7,417,505	66,148	1,338,388	8,384,099
1945	7,608,466	115,876	1,681,093	9,034,787
1946	8,421,680	2,752,575	1,507,546	9,051,358
1947	10,359,132	3,100,315	1,412,803	9,429,964
1948	12,057,741	2,233,277	2,015,985	11,925,909
1949	12,500,250	1,289,995	2,142,937	13,501,152
1950	12,490,041	683,387	2,274,161	14,346,913
1951	12,257,777	64,085	2,933,432	15,432,881
1952	12,471,605	--	2,683,703	15,606,211
1953	13,537,046	1,572,000	3,906,202	16,335,853
1954	14,119,259	1,558,000	3,488,426	16,364,115

<u>Fiscal Year Ending or Period Ending</u>	<u>Coal Lands, Plant and Equipment, Less Reserves for Depreciation and Depletion</u> ↓	<u>Long-Term Indebtedness</u> ↓	<u>Working Capital</u> ↓	<u>Net Assets or Stockholders' Equity</u> ↓
1955	13,704,308	573,199	2,516,334	16,371,127
1956	13,204,764	--	3,179,295	17,354,763
1957	13,298,913	180,000	3,438,544	18,500,970
1958	15,361,414	--	2,538,648	18,894,110
1959	16,684,704	1,200,000	2,772,358	19,627,151
1960	20,105,940	3,380,502	3,026,630	20,411,351
1961	20,334,453	2,442,545	3,284,855	21,962,932
1962	21,110,096	1,929,701	3,190,428	23,272,504
1963	21,582,653	515,599	2,880,987	24,703,850
1964	20,596,624	--	6,795,011	28,147,321
1965	20,277,196	--	8,369,428	29,402,009
9/30/66	18,794,232	--	11,134,822	30,682,939
1966	18,448,086	--	3,461,975	22,663,946
1967	17,619,538	--	5,877,523	24,249,446

Sources: 1949 Annual Report of UEC (Kolbe deposition Exhibit 52) for the years 1940-1949; 1959 Annual Report of UEC (Kolbe deposition Exhibit 5) for the years 1950-1959; 1965 Annual Report of UEC (Nugent Deposition Exhibit 31) for the years 1956-1965; the "Invitation for Tenders" (Nugent Deposition Exhibit 35a-35g) for 9/30/66; General Dynamics Corporation Balance Sheet for UEC dated December 31, 1966 (Nugent Deposition Ex. 36a) for 1966 and General Dynamics Corporation Balance Sheet for UEC dated December 31, 1967 (Nugent Deposition Exhibit 37a) for 1967.

## THE UNITED ELECTRIC COAL COMPANIES

NET SALES, EARNINGS BEFORE INCOME TAXES, NET EARNINGS,  
AND NET EARNINGS AS A PERCENTAGE OF NET SALES  
1940-1968

GX 25

<u>Year</u>	<u>Net Sales</u>	<u>Earnings Before Income Taxes</u>	<u>Net Earnings</u>	<u>Net Earnings as a Percentage of Net Sales</u>
1940	\$ 3,273,881	\$ 205,932	\$ 174,432	5.33
1941	4,129,483	412,934	364,834	8.83
1942	5,707,451	976,596	731,596	12.82
1943	5,478,425	1,187,133	742,133	13.55
1944	6,682,975	1,637,208	837,208	12.53
1945	6,881,203	1,784,790	904,790	13.15
1946	6,467,000	764,790	566,571	8.76
1947	8,247,871	1,339,305	928,605	11.26
1948	13,620,152	4,890,545	3,183,445	23.37
1949	14,481,307	3,994,443	2,537,743	17.52
1950	10,556,660	1,922,511	1,137,511	10.78
1951	16,488,426	3,921,338	2,076,338	12.59
1952	13,470,364	2,088,470	1,529,170	11.35
1953	14,742,135	2,132,562	1,470,562	9.98
1954	13,000,509	1,021,182	706,182	5.43
1955	12,476,899	897,332	684,932	5.49
1956	14,960,424	2,311,556	1,661,556	11.11
1957	16,300,572	3,004,006	2,044,006	12.54
1958	15,454,725	2,335,664	1,548,664	10.02
1959	15,770,289	2,611,313	1,811,313	11.49
1960	16,021,572	2,342,472	1,862,472	11.62
1961	18,135,466	3,629,853	2,629,853	14.50
1962	19,055,659	3,505,236	2,455,236	12.88
1963	19,904,586	3,529,402	2,644,402	13.29
1964	23,195,866	5,053,676	3,478,676	15.00
1965	21,803,576	3,417,744	2,467,744	11.32
1966	23,890,513	5,479,630	3,679,630	15.40
1967	23,395,820	4,238,499	3,085,499	13.19
1968	To be supplied on receipt of information			

Sources: UEC's 1949 Annual Report (Malbe Deposition Exhibit 52) for the years 1940 through 1949; UEC's 1958 Annual Report (Malbe Deposition Exhibit 4) for the years 1949 through 1958; UEC's 1965 Annual Report (Mugent Deposition Exhibit 31) for the years 1959 through 1965; Mugent Deposition Exhibit 360 for 1966 and Mugent Deposition Exhibit 370 for 1967.



# Coal

## FEATURES

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## — Basic Analysis —

April 22, 1965 (Section 2)

Discard Basic Analysis dated April 29, 1963.

# Standard & Poor's INDUSTRY SURVEYS



## Utilities Provide Growing Market for Bituminous

**B**ITUMINOUS (soft) coal is a vital factor in industrial progress, even though competition from other fuels and changing technologies have reduced or practically eliminated demand in some formerly important markets and current output is some 19% below the record high achieved shortly after World War II. In recent years, demand has been trending upward. Production in 1965 was the highest since 1951 and further gains seem likely.

Coal is the principal fuel used in generating the tremendous quantities of low-cost electric power so necessary for industry, commerce, and a high standard of personal living. It is an indispensable element in large-scale economic production of steel, cement, and many chemicals. It is one of the few natural resources in which the United States is still a net exporter because of extensive reserves and comparatively cheap mining costs.

Coal's major and growing market is the electric power industry, where the fuel is burned to produce steam that in turn drives electrical generators. Electric utilities used 3.5 times more coal in 1965 than at the end of World War II. The sizable increase in demand for electric power projected through 1980 is expected to result in substantial further growth in coal usage, despite competition in some areas from oil, natural gas, and atomic power.

The longer-range threat to soft coal posed by nuclear power generation is expected to be greatest in areas remote from mine fields, where heavy trans-

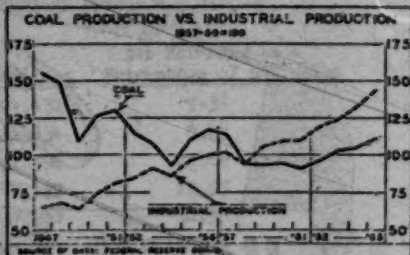


Table 1  
INDUSTRIAL PRODUCTION VS. COAL PRODUCTION  
In Relative, 1907-2000

Year	Total Ind. Prod.		Year	Total Ind. Prod.		Year	Total Ind. Prod.	
	Prod.	Coal		Prod.	Coal		Prod.	Coal
1935	142.2	111.9	1941	169.7	94.1	1947	168.7	113.4
1936	132.8	107.1	1942	168.7	92.7	1948	92.9	117.1
1937	124.3	102.5	1943	161.6	92.9	1949	94.6	110.1

Source: Federal Reserve Board.

portation costs diminish coal's competitive advantage. On an overall basis, atomic power seems likely to supplement coal, rather than displace it entirely.

The impact of growing usage of coal in the utility field has been lessened by losses in other markets, particularly railroads and home heating where coal usage has contracted to such an extent that future declines will be relatively small. The steel industry is expected to remain a major consumer, but gains in blast furnace efficiency may offset the effects of a

Table 2  
STEAM-ELECTRIC PLANT FUEL CONSUMPTION, BY REGIONS

	Cost per Million G.P.D.										Cost per Million G.P.D.		
	New England	Atlantic	West North Central	West South Central	North Atlantic	East North Central	West South Central	Mountain	Pacific	Total United States	Coal Consumption States	Total United States	Coal Consumption States
Cost	Thousand of Dollars										Cost	Cost	
1921	1,797	40,228	51,570	12,740	39,592	23,922	10	6,644	---	224,137	223,740	24.6	24.5
1922	1,808	20,000	28,610	12,610	36,610	23,610	10	6,644	---	224,137	223,740	24.6	24.5
1923	1,154	25,281	28,773	12,353	32,502	27,555	---	2,275	---	191,560	192,625	23.6	23.6
1924	6,634	33,656	39,644	10,319	30,858	27,466	10	2,275	---	182,082	180,584	23.6	23.6
1925	14,601	31,115	37,105	15,555	26,620	27,814	---	2,275	---	172,810	172,810	23.6	23.6
1926	8,620	31,963	39,370	7,779	25,534	23,620	---	2,250	---	163,621	164,755	23.6	23.5
1927	1,795	36,880	43,752	8,000	22,760	21,510	1	1,376	---	152,514	151,504	22.4	22.5
Cost (Coal Expenditure)	1,621	2,795	52	110	6,117	16	22	431	4,520	24,479	13,918	22.4	22.5
1922	4,290	2,418	77	165	6,117	76	22	431	2,223	12,213	12,213	22.4	22.5
1923	1,253	7,715	77	165	4,006	17,767	66	461	1,750	11,549	11,549	22.4	22.5
1924	4,150	6,560	69	68	2,464	17	16	461	4,419	21,727	11,616	22.5	22.4
1925	4,126	6,161	66	101	2,114	14	27	626	6,657	21,149	11,141	22.5	22.4
1926	2,597	2,637	73	165	2,664	753	27	626	4,573	11,613	11,613	22.5	22.4
1927	2,591	3,108	43	39	3,819	31	30	461	4,418	11,320	5,362	22.4	22.6
Cost (Coal Expenditure)	1,750	2,172	15,457	5,065	4,731	40,121	1,695	21,737	49,699	26,555	22.5	22.6	
1922	3,495	3,634	3,101	11,527	8,574	2,524	1,974	17,720	49,694	24,654	22.6	22.6	
1923	4,287	2,619	10,789	8,574	2,524	22,692	6,795	17,791	52,002	25,624	22.6	22.6	
1924	2,542	3,701	10,711	2,542	1,864	14,408	4,641	14,408	49,694	24,654	22.6	22.6	
1925	513	3,877	2,814	8,294	8,750	2,520	27,073	14,915	70,677	27,329	27	22.6	
1926	491	4,250	2,137	8,619	4,250	2,520	27,073	14,915	64,627	27,329	27	22.6	
1927	1,837	2,637	3,823	1,837	1,128	22,534	3,827	3,827	54,630	19,749	22.7	22.5	

Note: Unit figures may not add to total because of rounding.

\*Conn., Maine, Mass., New Hamp., N.J., Va. N.Y., State & City, Penna. (incl. Phila.), Ill., Ind., Mich., Ohio, Wisc., Iowa,  
Pa., Minn., Mo., Ark., La., Texas, Okla., Colo., Mont., Nev., New Mex., Utah, Wyo., \*Calif., Ore., Wash., \*Caribbean Fla., Miss., Ariz., Miss., Trin.,  
Ia., Ohio, Tenn., \*Ariz., Colo., Mont., Nev., New Mex., Utah, Wyo., \*Calif., Ore., Wash., \*Caribbean Fla., Miss., Ariz., Miss., Trin.,  
Central and Pacific Regions.

Source: National Coal Association.

moderate rise in steel production and the increase in blast furnace output demanded by newer steelmaking furnaces. Foreign markets hold some promise as a sizable but volatile outlet for metallurgical grade coal, since the U.S. product is fairly essential to steel producers in Canada, Europe, South America, and Asia.

On balance, substantially higher production of bituminous is indicated over the longer term, spurred mainly by increasing usage of electric utilities. By 1980, domestic coal output could approach 800 million tons, well above the record 631 million tons of 1947 and some 57% higher than in 1965.

Obviously, coal companies shipping most of their tonnage to electric utilities have the greatest future potentials. The mines best situated in this respect are in the east-central and central United States, where potential new demand is sizable and where the proximity of coal deposits, the availability of cheap transportation on inland waterways, and favorable mining factors enhance coal's competitive position.

### Technology

Technological progress has sharply reduced some coal markets while other developments have enhanced the fuel's position. The most significant technical gains for coal have been the increasing efficiency of steam boilers and rising productivity in the mines. In 1945, utilities used an average of 1.3 pounds of coal to generate one kilowatt of electric power. By 1965, this ratio had been reduced to 0.86 of a pound. A further

Table 5  
FUEL ECONOMY IN CONSUMPTION OF COAL

Year	Electric		Year	Electric	
	Utility Pounds of Fuel per Kwh	Ton of Fuel per 100 Pk. Load		Utility Pounds of Fuel per Kwh	Ton of Fuel per 100 Pk. Load
1940	0.85	1.25	1950	0.80	1.20
1941	0.84	1.24	1951	0.80	1.20
1942	0.84	1.24	1952	0.80	1.20
1943	0.85	1.25	1953	0.80	1.20
1944	0.85	1.25	1954	0.80	1.20
1945	0.86	1.26	1955	0.80	1.20

Source: Federal Power Commission and American Iron & Steel Institute.

decline is possible as new and more efficient generating plants are placed in operation, but this increasing efficiency is expected to continue to be substantially outweighed by the expansion of power generation, which in turn is stimulated by the reduction in electric power costs to the consumer.

As to mining efficiency, daily output per man rose from 5.78 tons in 1945 to almost 17 tons in 1964. (Table 12). Further gains are indicated with increasing usage of continuous mining machines in underground operations and larger equipment in strip mines, as well as the increasing proportion of coal mined by more efficient strip and auger methods.

The most important technological advance in recent years has been in the area of new transportation concepts. The early stimulus of coal slurry pipelines and, more recently, unit and integral railroad trains and extra high voltage electric transmission lines have served to reduce the delivered costs of this bulky commodity. Extension of these and other new ideas seems likely to continue to cut future transportation costs. The position of coal may also be eventually improved by commercial conversion of coal into gasoline, pipeline gas, and other petroleum products, all of which are technically feasible.

Under the auspices of the Office of Coal Research of the Department of the Interior, CONSOLIDATION COAL is constructing pilot plants for the production of gasoline from bituminous coal and pipeline gas from lignite. Substantial research is being conducted in other areas by government agencies, industry associations, and individual companies, all aimed at developing new markets for coal.

### Utility Demand

Electric utilities, which furnish the fastest growing mass market for soft coal, used about 243 million tons of bituminous in 1965, equal to 53% of total domestic consumption. Electric utility demand increased about 57% in the past ten years, while total domestic usage rose only 6%, mainly reflecting sharply reduced consumption by railroads and retail consumers and a moderate decline in coal needs of industrial customers. Utilization of coal for power generation increased in every postwar year, except

Table 3  
\*SOURCES OF ENERGY IN THE U. S.

Year	Anthracite	Bituminous	Total	Coal	Crude	Natural	Total Oil	Water
	Coal	Coal	Coal	Petroleum	Gas	Gas	& Gas	Power
1945	0.9%	26.0%	27.4%	32.8%	35.4%	68.6%	4.2%	
1946	0.9	26.0	27.5	32.6	35.3	68.3	4.0	
1947	1.0	26.0	27.0	32.4	35.2	70.1	3.9	
1948	1.0	25.5	26.5	32.4	34.5	69.7	4.0	
1949	1.0	25.0	26.0	32.0	33.0	69.0	4.1	
1950	1.1	24.1	25.2	30.3	32.2	68.0	3.4	
1951	1.2	24.4	25.6	31.5	31.8	68.3	4.0	
1952	1.4	23.5	24.9	30.3	31.5	68.3	4.0	
1953	1.5	23.0	24.5	30.3	31.5	68.3	4.0	
1954	1.6	22.5	24.1	30.3	31.5	68.3	4.0	
1955	1.7	21.5	23.0	30.3	31.5	68.3	4.0	

\*Water power at constant fuel equivalent: anthracite—15,700 B.t.u. per pound; bituminous coal—13,100 B.t.u. per pound; crude petroleum, 1,500,000 B.t.u. per barrel; and natural gas, 1,000 B.t.u. per cubic ft. (includes nuclear power (one tenth of one percent each year), beginning 1962).

Source: U. S. Bureau of Mines.

Table 4  
PRODUCTION AND VALUE AT THE MINES

Year	Bituminous Coal		Anthracite	
	Production 1,000 Tons	Value \$1,000	Production 1,000 Tons	Value \$1,000
1945	510,000	2,529,580	16,444	142,619
1946	495,000	2,462,043	17,164	152,602
1947	479,928	2,015,260	15,567	132,602
1948	423,149	1,831,084	14,884	131,604
1949	402,677	1,644,563	17,446	140,523
1950	413,512	1,560,455	18,617	147,416
1951	412,028	1,545,697	20,649	172,320
1952	416,446	1,594,591	21,171	187,893
1953	402,704	1,564,086	20,520	187,741
1954	400,874	1,412,601	20,609	188,782
1955	404,803	1,422,989	20,703	188,697

P—Preliminary.

Source: U. S. Bureau of Mines.

1946 and 1949, when strikes cut supplies, and 1958, when the recession and stiff competition from residual oil caused a moderate decline.

This national average conceals wide geographical differences. As indicated in Table 2, growth in electric utility usage in recent years was greatest in the East Central districts and in the South Atlantic states, where coal encounters the least competition from other fuels. While competition from residual oil continues to be strong, improved transportation concepts in both coal and electrical energy are currently allowing improvement in the Northeast; similar factors are also stimulating coal demand in the Mountain district.

Costs of fossil fuels per kilowatt hour average about 2.6 mills nationally, with coal slightly less, gas roughly the same, and oil at 3.5 mills. Hydroelectric power, when available, is generally somewhat cheaper. Compared with a decade ago, costs for coal have declined about 8%, oil costs are down about 10%, but the cost of gas has risen more than 25%.

As indicated by Table 2, natural gas is almost the exclusive fuel used in the Southwestern producing districts; usage in other districts is greatest in the summer, when heating demand is low and gas transmission companies offer utilities reduced prices to utilize pipeline capacity. Some domestic fuel oil is used in various producing districts, but a major part of the total supply is imported residual oil which is transported cheaply by water to both the East and West Coasts. Virtually no coal is used on the West Coast because of high transportation costs, but electric power generated at a coal fired plant in Nevada will be transported by high voltage lines to California beginning in 1970.

Quotas limit imports of residual oil, but these have been regularly increased in recent years and arguments for abandoning the quota system are gaining increasing support. Such a move would mark-

Table 6  
COAL SHIPMENTS IN 1961 BY TYPES OF MARKETS

Industry	Millions of Tons Shipped	Percentage Breakdown by Markets					
		Electric Utilities	Other	Export	Other	Total	Mill.
Consolidation Coal	55.61	54	24	15	8	—	3
East, Group Fuel	17.10	—	—	—	—	—	—
Island Creek Coal	31.60	13	35	20	7	—	4
Pennsylvania Coal	55.60	78	—	—	—	—	—
Pittston	13.61	42	35	19	—	—	4
Pittston Electric	8.85	72	—	—	—	—	—

Includes output of jointly-owned mines. Figures for companies include purchased coal, except in the case of Pittston, which are for the company only. Market breakdown for 1962; latest reported. Includes coaling. Great Lakes bunker fuel.

Source: Company reports.

edly increase competition from oil, particularly on the eastern seaboard.

Increases in steam boiler efficiency contributed to the modest decline in the cost of coal per KWH over the past ten years, along with improved mining methods and, more recently, reductions in freight rates. The amount of coal required to generate one KWH stood at 0.86 pounds in 1965, unchanged since 1961 but down from 0.95 pounds in 1955 and 2 pounds in 1925. Despite the absence of any appreciable change in this figure in recent years, eventual resumption of the longer-term down-trend is expected with the addition of new plants, most of which require less than 0.7 pounds per KWH.

Bituminous coal (together with a small tonnage of anthracite) accounted for 54% of total electric energy produced by utilities in 1965. Excluding hydroelectric plants, coal furnished 67% of power-generating requirements of utilities, with gas supplying 26% and oil 7%. Relative to oil and gas, coal's market position seems likely to be well maintained at least through 1980. Of the three fossil fuels, coal has the most favorable price trend and there is room for some doubt that reserves of gas and oil are sufficient to fill the anticipated sizable rise in utility fuel demand. However, after 1970, markets for all fossil fuels will probably be subject to some erosion from nuclear power (see below). Domestic generation of hydroelectric power may lose some of its position, due to exhaustion of available locations, although the possible importation of hydro-power from Canada could prove in part offsetting.

Table 7  
CONSUMPTION OF BITUMINOUS COAL & LIGNITE BY CONSUMER CLASS  
In Thousands of Net Tons

Year	Electric Power Utilities	Bunker Fuel Foreign & Lake Vessels	Railroad (Class I)	Coke: Open & Steel Mills				Other Non-Mining	Total	Retail Dealer Deliveries	Grand Total
				Electric Plants	Open Coke Plants	Steel Mills	Total				
1962	242,729	535	N.A.	2,519	82,091	7,466	182,679	8,545	186,241	120,575	438,876
1961	225,022	711	N.A.	2,625	74,772	8,254	86,181	8,979	157,134	125,613	431,116
1960	208,028	670	N.A.	1,615	76,029	7,691	85,694	8,128	82,797	172,809	400,228
1959	199,877	987	N.A.	1,329	72,928	7,319	81,561	7,719	78,769	168,062	387,133
1958	173,912	869	N.A.	1,481	72,255	7,423	81,724	7,415	77,260	164,771	377,405
1957	173,629	719	N.A.	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1956	173,912	869	N.A.	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1955	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1954	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1953	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1952	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1951	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1950	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1949	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1948	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1947	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1946	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1945	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1944	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1943	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1942	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1941	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1940	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1939	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1938	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1937	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1936	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1935	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1934	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1933	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1932	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1931	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1930	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1929	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1928	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1927	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1926	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1925	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1924	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1923	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1922	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1921	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1920	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1919	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1918	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1917	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1916	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1915	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1914	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1913	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1912	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1911	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1910	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1909	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1908	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1907	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1906	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1905	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1904	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1903	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1902	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1901	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429
1900	163,756	869	2,400	1,877	77,314	7,208	88,325	8,216	74,487	172,604	390,429

Collected by the Federal Power Commission. Collected by the Association of American Railroads. Includes bituminous coal for railroads used; included in other manufacturing and mining after 1920. Includes some coal shipped by truck from mine to final destination. Note: See Current Industry Surveys for later data. N.A.—Not available.

Source: U. S. Department of Interior, Bureau of Mines.

The Federal Power Commission has estimated that output of electricity in 1980 will be slightly more than three times that of 1960. The consumption of coal by electric utilities is not expected to rise as rapidly, largely because of the increasing importance of nuclear power generation, as well as some further gains in steam plant efficiency. These factors are expected to reduce coal's market share to 47% in 1980, compared with 54% in 1965. Despite this erosion, it is readily evident that the potential for absolute growth is sizable. Utility coal usage is thus projected at 500 million tons in 1980, representing an annual increase of almost 5% from the 243 million tons of 1965. Current and planned additions to generating capacity reinforce this longer-range projection and enhance near-term prospects. New conventional steam generating capacity totaling 11 million kilowatts was added in 1965, and current plans call for the installation of an additional 37.6 million KW by 1969; the latter is equal to about 16% of the total installed generating capacity at the end of 1965.

### Nuclear Power Generation

Nuclear power at present is not a significant factor in the total power generation industry, as it accounted for slightly less than 1% of the installed steam capacity at the end of 1965. Nor is it expected to seriously affect coal's growth in this market through the end of the present decade. However, recent projections of total operating costs for nuclear power installations indicate that, by 1980, nuclear power may become fully competitive at most locations with fossil fuels (coal, gas and oil) in the generation of electric power.

Nuclear power offers two significant potential advantages over conventional fossil fuels; the ability to produce large quantities of electric power from small amounts of fuel, thus allowing generating stations to be located closer to load centers due to the absence of sizable fuel transportation costs, and operation without discharge of combustion wastes that would contribute to air pollution.

Of the nuclear plants in operation now, the most successful is the Rowe, Mass., plant of the YANKEE ATOMIC ELECTRIC Co., which has net power costs of slightly under 10 mills per kilowatt hour, above the cost obtainable from new conventional capacity in the same area. However, costs of the planned Oyster Creek plant of JERSEY CENTRAL POWER (to begin operation in 1968) are projected at 3.79 mills per KWH at peak operation, well below the costs of a coal-fired plant at the same location and slightly less

than power transmitted to the area from a Pennsylvania mine-mouth station. Similarly, COMMONWEALTH EDISON's 200,000 kilowatt unit, planned to start up in 1969, is expected to deliver power to the Chicago area at costs slightly lower than those of the company's newest conventional coal-fired plant.

Estimates by the Federal Power Commission indicate that costs of nuclear power generation, which is expected to supply 19% of total electric power requirements in 1980, may decline to levels in that year equivalent to fossil fuel costs per KWH of 1.1 to 1.7 mills. There continues to be wide geographic disparity in the economic advantage of nuclear power relative to coal, and the type of new capacity installed in future will vary according to plant location, with the greatest initial growth in nuclear power use expected in such high-cost coal areas as the Pacific Coast, where relatively no coal is used, and the Northeast, where oil and gas have important shares of the market. Coal costs per KWH, which averaged 2.5 mills in 1964, seem likely to decline, reflecting further gains in mine efficiency and reductions in freight rates, thus providing a moving competitive target for nuclear power. As a result, many observers feel that atomic power will supplement rather than replace coal in utility markets.

### Steel Industry Demand

Steel producers provide coal with its second largest market and consume over 90% of coking coal (excluding exports). Coals from Eastern fields varying in volatile content are blended by steel companies and then carbonized into coke for use in the blast furnaces which separate iron from the major impurities contained in iron ore. Under present technology, coal is indispensable for large-scale, economic production of most steel grades but gains in blast furnace efficiency have seriously reduced the amount of coal needed in the steelmaking process, as shown in Table 5 by the decline in coke consumption per ton of steel produced.

Further reductions in coal use per ton of pig iron produced seem inevitable, reflecting increased availability of concentrated iron ores and gains in blast furnace efficiency stemming largely from injection of lower cost fuels (oil, gas or powered steam coal) into the furnace.

Over-all, coke usage per ton of pig iron has declined by about 30% since 1949 and some industry experts believe that further reduction of up to 50% are possible. One favorable technological development has been the growing usage of basic oxygen



steelmaking facilities which utilize a larger proportion of pig iron relative to scrap than do regular open hearth furnaces. On a longer-range basis, direct reduction of iron ore may become economically feasible. This would further curtail steel industry consumption of coking coal although additional quantities of steam grades might be needed for the large power requirements of direct reduction processes.

In producing one ton of pig iron in a blast furnace, about 1,310 pounds of coke are used, which is equivalent to around 1,900 pounds of coking coal. Coal is also used by steel companies for heat and power but this usage accounts for less than one tenth of the industry's consumption. Many steel and coke producers operate their own mines. This "captive" production supplies approximately two-thirds of total coal requirements. When steel production declines, commercial coal operators generally are adversely affected first, although contract terms do result in variations among companies.

#### Other Industrial Demand

Reflecting the increased availability of natural gas and fuel oil, consumption by merchant (non-steel) coke producers of metallurgical grades and demand for steam coal by other industrial users has been in a general decline through most of the postwar period. Substantial improvement is possible in certain markets, however, highlighted by expansion of cement production and also the use of steam plants for producing power used by aluminum companies.

#### Railroad and Retail Demand

Before and during World War II, railroads and retail consumers each accounted for over 20% of total domestic consumption. With dieselization, coal now accounts for only a nominal portion of total railroad fuel requirements. Coal use by railroads fell 98% from 1945 to 1960, or from 22% of total consumption to 0.6%; because of its lack of importance in coal markets, rail consumption has not been reported separately since 1960. Utilization of more efficient fuels in home heating precipitated an 84% decline in retail consumption from 1945 to 1965; the retail market amounted to 4% of coal consumption in the more recent year, down from 21% in 1945.

#### Export Markets

Metallurgical grades (particularly low-volatile) accounts for about 62% of exported coal, and the cyclical nature of demand for this type of coal is made more volatile by changes in shipping rates, import restrictions, and foreign exchange considerations. In the postwar years, exports ranged from 5% of U.S. production in 1950 to 13% in 1957, and accounted for about 10% of output in 1965.

Table 8  
U. S. EXPORTS OF BITUMINOUS COAL  
In Thousands of Net Tons

	1937	1938	1939	1940	1941	1942	1943	1944	1945
U. S. & Central Amer.	18,522	12,384	12,678	11,742	11,238	11,476	12,588	14,716	13,727
Canada	14,415	12,558	12,482	11,623	11,509	11,419	12,762	14,165	13,621
South America	2,288	1,432	1,409	2,178	1,790	2,128	1,432	2,069	1,934
Brazil	1,688	893	881	1,603	978	1,216	1,158	1,191	1,210
Europe	49,741	25,899	18,123	16,891	15,239	14,514	23,214	27,072	24,822
Germany (West)	13,376	8,768	4,862	4,266	4,236	4,812	2,568	4,101	4,728
Italy	8,762	6,999	2,299	1,836	4,231	2,621	7,612	7,384	8,561
Netherlands	8,861	2,213	2,594	2,761	2,192	2,136	4,379	6,948	7,271
Asia	3,672	3,338	4,077	3,651	4,017	6,167	6,051	6,317	7,191
Oceania	4,872	2,529	4,629	2,617	6,618	6,951	6,072	6,312	7,091
Africa	271	8	13	57	63	24	62	11	11
Total	76,116	36,260	27,332	26,119	24,574	27,427	47,329	57,329	54,181

Sources: Bureau of Mines and Bureau of the Census.

Canada has historically been the largest single foreign market for U. S. coal, and is expected to remain in this position for some time to come. However, with the increasing development of oil and natural gas resources and of pipeline networks, dependence on imports has lessened; in the past ten years, U.S. coal exports to Canada fell 24%. Overseas shipments hit a peak of \$8 million tons in 1957, reflecting the fuel shortages stemming from the Suez crisis, but dropped sharply in 1958. However, shipments have trended generally upwards since 1960, amounting to 34.5 million tons in 1965. Countries in the European Common Market, which take about 42% of total exports, are the largest overseas outlet, followed in importance by Japan.

Most U.S. coal shipped to the Common Market is for metallurgical use, although some steam coal is also shipped and a fairly sizable portion of the metallurgical coal is gasified by gas utilities before the resultant coke is sold to steel makers. Even with the addition of ocean shipping rates to the U.S. prices, U.S. coal is often quite competitive with domestic coal in Europe, due to the low productivity of European mines (generally around 5 tons per man day, versus about 17 tons in the U.S.). However, to protect their producers from competition from imported coal and oil, most European nations have enacted stiff fuel import quotas, which have restricted this market for U.S. coal.

U.S. exports to Japan rose sharply in recent years, reflecting largely the growth in steel production there and limited domestic supplies. However, prospects for further expansion are not as bright, as the growth rate of the Japanese steel industry will probably decline, while lower transportation costs and the development of extensive reserves make coal from Australia increasingly attractive.

#### Prices; Contracts

The level of business activity, seasonal variations in demand, labor disturbances, and the availability of railroad cars cause fluctuations in coal prices. The price structure is based on the grade and quality as



well as the quantity taken. Prices of competing fuels are also important.

Coal is often sold to utilities under long-term contracts at fixed prices (with escalation clauses) or by some on a cost-plus basis. Long-term contracts are most important in the Midwest, with the contracts running to 20 years and over. Many eastern utility contracts are still on a annual basis, commencing in April, but longer terms are becoming more important and are often made in conjunction with arrangements with railroads for reduced rates on trainload lots.

In recent years, the price structure in eastern non-utility markets has been weakened by competition from non-union producers (whose low labor costs offset low productivity), residual fuel oil, and dump gas in the summer months (due to absence of space heating uses). In addition, metallurgical coal is often sold at reduced prices in steam markets when steel industry demand is low.

The rise in steel industry operating rates since 1963 and sharply higher utility demand allowed moderate price increases in eastern utility markets in early 1966. Midwestern prices continue firm, with competition coming mainly from gas. The absence of significant price increases has narrowed industry profit margins somewhat, but it has also allowed coal to win new customers in the electric utility industry. Large-scale producers have achieved a partial offset through increased mechanization; absence of labor cost increases in 1960-63 also aided in countering declining prices in those years.

### Types of Coal

Coal, which constitutes 87% of the nation's proven fossil fuel reserves, is classified as anthracite, bituminous, subbituminous, and lignite. Anthracite, or hard coal, is nearly 90% carbon with only a small amount

Table 10  
CONSUMPTION, STOCKS, AND DAILY SUPPLY OF  
BITUMINOUS COAL

In Millions of Net Tons

DOMESTIC CONSUMPTION

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1967	45.01	39.71	41.39	35.47	35.42	37.59	38.11	35.33	34.33	34.11	34.73	42.41	431.54
1968	37.03	34.74	34.53	32.46	32.71	32.52	32.77	32.42	31.49	31.11	32.37	41.93	421.33
1969	35.67	35.98	31.87	31.75	31.67	31.29	30.41	29.67	28.67	28.07	28.52	31.82	403.20
1960	35.41	31.18	32.77	30.87	29.85	29.41	29.51	28.67	28.07	28.52	28.52	31.82	403.20
1961	35.79	32.24	31.07	29.43	29.11	28.87	28.41	28.07	28.07	28.07	28.07	31.82	403.20
1962	34.17	34.14	30.15	28.93	28.67	28.24	28.11	27.44	27.44	27.44	28.52	31.82	399.43
1963	34.20	32.25	30.70	29.51	29.25	28.52	28.11	27.44	27.44	27.44	28.52	31.82	399.43

STOCKS—END OF PERIOD

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1967	78.41	62.11	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82
1968	62.11	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82
1969	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82
1960	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82
1961	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82
1962	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82
1963	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82	61.82

DAILY SUPPLY

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1967	12	11	11	11	11	11	11	11	11	11	11	11
1968	11	11	11	11	11	11	11	11	11	11	11	11
1969	11	11	11	11	11	11	11	11	11	11	11	11
1960	11	11	11	11	11	11	11	11	11	11	11	11
1961	11	11	11	11	11	11	11	11	11	11	11	11
1962	11	11	11	11	11	11	11	11	11	11	11	11
1963	11	11	11	11	11	11	11	11	11	11	11	11

Source: U. S. Bureau of Mines.

of volatile elements. Bituminous, with a lower fixed carbon content, is ranked as high, medium, or low-volatile, depending upon the proportion of bitumens or volatile elements which are released by heat. Subbituminous contains 15 to 30% moisture and has a lower B.t.u. content than bituminous. Lignite, the youngest coal geologically, has more volatile elements and moisture than any of the others and a lower carbon content. Lignite production is relatively small in the United States; in Europe, it is an important fuel.

Commercially, bituminous coal is rated as *metallurgical* and *steam* grades. Metallurgical coal (which is simply a coal that can be made into coke economically) softens and runs together when heated in a sealed oven. The volatile elements are driven off, leaving coke, a porous mass of nearly pure carbon (which produces a more intense heat than the volatile elements). In making coke, high volatile bituminous coal (averaging about 36% volatile matter) is usually blended with low volatile bituminous (about 18% volatile content), with low volatile accounting for 15%-20% of the total. However, medium volatile coal (about 26% volatile content) is fairly often used as part of the blend, and occasionally makes up the major part of it. Low volatile bituminous coal is relatively scarce, and often commands a premium price.

The main use for coke is in making pig iron, most of which, in turn, is converted into steel. Steam coal's principal use is in boilers, the energy produced being then directed to heating or processing. Metallurgical coal can be used in place of steam coal, although such substitution is costly; steam coal, however, cannot replace metallurgical grades.

Table 9  
PRICES  
In Dollars Per Ton

Year	Market Value at Mines	Metallurgical		Steam Value at Mines	Wholesale Cost—net
		Produced	Consumed		
1967	4.63	N.A.	4.79	6.92	22.89
1968	4.43	N.A.	4.89	6.50	22.89
1969	4.29	3.21	4.73	7.41	22.89
1960	4.03	3.21	4.52	7.33	22.89
1961	3.88	3.21	4.32	7.29	22.89
1962	3.69	3.40	4.24	7.29	22.89
1963	3.77	3.43	4.23	7.23	22.89
1964	4.16	3.22	4.21	7.24	22.89
1965	3.98	3.22	4.21	7.24	22.89
1966	4.03	3.49	4.20	7.18	22.89
1967	4.09	3.54	4.23	7.20	22.89

\*Average price at mines includes the value placed on coal at the mines. The price is based on the value of all production of coal.

Note: See Current Industry Surveys for later data.  
(Not strictly comparable with prior data beginning with 1962.)

A. Not available.  
Source: U. S. Bureau of Mines and U. S. Bureau of Labor Statistics.

### Productivity

Daily output per man amounted to 16.8 tons in 1964, and was probably in excess of 17 tons for all of 1965. Expanded utilization of continuous mining and loading machines has increased output per man-day by more than 11 tons since the end of World War II; in the period from 1900 to 1945, only 2.8 tons were added to daily productivity.

High wage rates are a strong incentive for increased usage of power cutters and drills, loading machines, and all types of conveyors and shuttle cars. The number of continuous mining machines in operation increased markedly in recent years; these now account for about 39% of total underground production and further increases are expected. Pick-and-shovel mining has virtually disappeared from underground mines (except for small non-union operations) and now only about 4% of coal is cut by hand and only 12.5% is loaded non-mechanically.

Mechanization of mines has resulted in more foreign matter being mixed with coal. When most operations were performed by hand, miners separated non-coal elements. To overcome this problem, preparation plants now clean over 63% of total coal produced, compared with 28% in 1947 and 8% in 1930.

Productivity has always been high in strip mines because of the size of the equipment and the relatively few men needed for operations. Output rose from 15.5 tons per man day in 1945 to 29.3 tons in 1964, while underground productivity increased from 5 tons daily to 14 tons. Some strip mines have a production rate of above 50 tons per man. These mines are mostly in the Midwest, where lower grade coal requires higher productivity for profitable operations.

### Underground Mines Vs. Strip Mines

Underground mines supplied 66% of total output in 1965, with strip and augur mines accounting for 31% and 3%, respectively. In underground

Table 12  
SIGNIFICANT STATISTICS OF THE BITUMINOUS COAL INDUSTRY

	Average Number Working Daily	Production Per Man Per Day (Tons)	—Basic Wage Effective Date of Contract	Rate—Daily Rate	—Daily Paymen <sup>1</sup>
				Dollars	
1963.....	129,655	16.84	April 1	\$26.25	0.40
1964.....	141,605	15.83		24.25	0.40
1965.....	143,822	14.72		24.25	0.60
1961.....	150,474	13.47		24.25	0.40
1960.....	157,400	12.83		24.25	0.40
1959.....	179,626	12.22		24.25	0.40
1958.....	187,497	11.87	April 1	24.25	0.40
1957.....	206,428	10.59	April 1	22.50	0.40
1956.....	224,125	10.28	Oct. 1	21.45	0.40
1955.....	235,061	9.84	Sept. 1	20.25	0.40
1954.....	247,367	9.47		18.25	0.40
1953.....	258,192	8.17		18.25	0.40
1952.....	268,217	7.47	Oct. 1	16.25	0.40

<sup>1</sup>Based on a 5-day week for an 8-hour underground day (reported to portal). <sup>2</sup>Payments per ton produced to United Mine Worker Welfare and Retirement Fund. <sup>3</sup>\$1.20 of wage increase effective January 1 and \$0.50 effective April 1, 1959. <sup>4</sup>Increases of \$1 effective on April 1, 1964, and January 1, 1965, under 1964 contract.

Source: U. S. Bureau of Mines.

Table 13  
ACTIVE BITUMINOUS COAL MINES

Annual Output—	1928	1928	1960	1962	1963	1964
200,000 tons & over ..	349	455	410	414	414	433
100,000-200,000 .....	345	295	252	255	267	273
50,000-100,000 .....	453	408	294	314	319	353
10,000-50,000 .....	2,112	2,169	2,162	2,201	2,250	2,299
1,000-10,000 .....	4,866	4,627	4,415	4,428	4,443	4,550
Total .....	8,520	8,248	7,886	7,710	7,940	7,930
% of output by mines over 100,000 tons .....	79.6	77.0	77.5	77.3	77.3	77.8
Total Capacity— (million tons) .....	853	825	809	804	827	806

<sup>1</sup>Based on 280 days a year.

Source: U. S. Bureau of Mines.

mining, coal is cut, blasted loose with explosives or compressed air, loaded on conveyors or cars and carried up to the surface. Continuous mining machines and accessory equipment consolidate these operations and allow a more uninterrupted flow of coal from the mining faces as well as much higher productivity. In underground production, generally about 50% of the coal is left to support mine roofs; in some areas, better roof conditions allow removal of more than 80% of the coal.

Strip (open pit) mining consists of removing overburden from coal seams relatively close to the surface with huge electric shovels capable of moving up to 140 cubic yards of dirt and rock in one bite. Smaller power shovels load the coal (which is usually loosened by explosives) on trucks for removal to preparation plants or customers. Output of strip mines was relatively small until World War II. During the past decade stripping production, while somewhat erratic, displayed a moderate upward trend. Coal obtained by this method is generally a cheaper grade but nearly 100% of the seams can be recovered.

When the overburden in a strip mine gets too thick to be removed economically, augur methods are used. These consist of drilling large holes into coal beds with augurs. It is relatively inexpensive and permits recovery of up to 65% of the coal.

Table 11  
TONNAGE OF COAL  
HANDLED OR TREATED MECHANICALLY

	Mechanically Loaded Underground	Handled by Wet and Dry Methods	Strip Mining	Mechanically Loaded Underground	Strip Mining
			Thousands of Tons		
F/1965 ..	284,971	324,870	123,129	2,455	7,177
1964 ..	281,101	310,308	121,659	2,468	7,468
1963 ..	252,541	259,262	144,141	2,065	6,822
1962 ..	240,920	271,623	150,300	2,378	7,547
1961 ..	285,350	264,711	121,579	2,044	7,112
1960 ..	345,764	272,129	122,530	4,701	7,099
1959 ..	343,781	265,757	125,953	6,752	7,643
1958 ..	347,372	263,625	118,243	7,514	8,254
1957 ..	305,727	304,027	124,109	7,514	8,254
1956 ..	307,602	292,243	127,066	6,661	7,754
1955 ..	264,971	272,715	116,693		

F Preliminary.

Source: U. S. Bureau of Mines.

### Transportation Costs

Because of its bulk, costs of delivering coal to customers are an important part of total costs to the consumer. In 1965, the average value of coal at the mines was \$4.45 a ton, but the average railroad freight charge added to the delivered cost was about two-thirds of this. Thus, a company could produce a higher grade of coal at a cheaper price than a competitor, but nearness to the ultimate consumer could allow the competitor to deliver his coal at a lower price per B.t.u., which is the chief determinant of fuel economy for a utility.

Close to 72% of the coal produced is moved from mines by rail. Shipments by water total only 12% of original movements but a substantial portion of coal is transferred to barges and other vessels before it reaches the ultimate user. Barge tows carrying up to 25,000 tons of coal ply the inland waterways, particularly the Monongahela, Allegheny, Kanawha, Ohio, and Mississippi Rivers. In addition, substantial tonnages are shipped over the Great Lakes and coastwise along the Atlantic seaboard. Over 13% of mine output is carried by trucks, particularly from strip and augur mines.

### New Transportation Methods

To reduce or eliminate the sizable competitive disadvantage posed by the high costs of transporting coal from the mines to distant consumers, producers are striving to find cheaper methods of getting coal to its markets. At present, the most notable example is the reduced rail freight rates offered on whole train loads of coal moving from a single or small number of mines to a single utility. First used in 1962, train load methods provide cost savings of up to 20% and their use has been accelerating. More recently, the "unit" train concept has been initiated, wherein a train made up of cars owned by a utility or a coal producer operates between one mine and one generating plant. Special equipment allows rapid loading, unloading and turn-around time, and cost savings often amount to 50%. Even greater economies are expected from the planned "integral train", which will use permanently coupled large cars, heated and insulated and equipped for rapid loading and unloading. Planned train loads of up to 35,000 tons compare with the 7,000 to 10,000 ton capacities currently in use.

To avoid the cost of carrying coal in bulk form, some utilities are locating generating stations near the mines, and transmitting power over long distances. Power losses are a problem, but technological improvements often allow sizable savings. Such "mine-mouth" power plants are now coming into use in connection with regional power grids, which con-

Table 11  
PRODUCTION BY LEADING COMPANIES

In Millions of Tons BITUMINOUS COAL PRODUCTION	1964		1965	
	Amt.	% of Total	Amt.	% of Total
Bethlehem Steel	9.51	9.02	11.14	2.56
Consolidation Coal	25.61	22.82	45.41	9.4
Eastern Gas & Fuel	10.47	8.70	30.78	2.3
Holland Creek	24.15	20.00	21.01	4.4
Peabody Coal	21.59	20.20	45.50	9.6
Pittston Co.	10.29	12.62	12.43	2.8
U. S. Steel	22.90	14.50	17.89	3.5

\*Includes output of jointly-owned mines.

†Includes West Kentucky Coal.

Source: Company reports.

nect a number of utilities and allow power interchanges as well as the distribution of the power from the mine-mouth plants.

Another method of coal transportation that has aroused considerable interest is the movement of a coal slurry (made up of coal and water) through a pipeline. One such pipeline was in successful operation in Ohio in 1957-63, and several others have been proposed in various parts of the country. However, the reduction in rail freight rates, which was the apparent cause of the Ohio pipeline shut-down in 1963, has stalled the installation of additional units in the East. In the West, however, a pipeline is being considered for transporting coal to a new generating complex in Nevada.

### Leading Producers

Despite the concentration of mining in a few states, small companies operating only one or two mines are typical. PEABODY COAL CO. and CONSOLIDATION COAL CO., the largest commercial producers, accounted for less than 10% each of total bituminous output in 1965. About 15% is produced by "captive" mines owned by steel companies, utilities, and other large coal users. U. S. STEEL's mines produced 18 million tons in 1965, or 3.5% of total production.

Large mines account for a disproportionate share of total output. The latest available figures reveal that about 3% of the mines in operation produced more than 500,000 tons of coal annually and contributed 55% of total tonnage. Some 6% of the mines turned out 100,000 tons to 500,000 tons for 23% of national output; 37% produced 10,000 to 100,000 tons for 19%; and 53% of the mines dug less than 10,000 tons for 3% of overall production.

Increased capital needs for opening and mechanizing mines plus rising wage rates have resulted in a trend toward consolidations. With the economies offered by large-scale operations, further concentration is likely. The number of operating mines declined from a high of 9,400 in 1950 to 7,600 in 1965.

### Reserves

Recoverable coal reserves in the U. S. were estimated at \$30 billion tons in 1960, consisting of 455 billion tons of bituminous, 365 billion of subbituminous and lignite, and 10 billion anthracite. At the present rate of consumption, bituminous reserves would be sufficient for over 1,500 years and anthracite deposits for over 500 years. About 200 billion tons of total reserves are regarded as economically recoverable at or close to present costs. These deposits make up more than one-third of the world's presently recoverable supplies.

Practically all U.S. anthracite is located in Pennsylvania. Principal bituminous reserves ranked by size are in Illinois, West Virginia, Missouri, Pennsylvania, Kentucky, Colorado, Ohio and Indiana. However, in order of production, West Virginia is the leader with 30% of 1965 output, followed by Kentucky and Pennsylvania, 16% each, Illinois 11%, Ohio 8%, and Virginia 7%.

The principal deposits of subbituminous coal and lignite are in North Dakota, Montana, Wyoming, Washington, Alaska, and New Mexico.

### Labor Relations

Following years of bitter strife, relations between coal management and the United Mine Workers (led by John L. Lewis until 1960) have been quite harmonious. No industry-wide strike has occurred since 1949, union leaders cooperate with management in settling wildcat and other local strikes, increasing productivity has been encouraged, and wage increases were passed up in several new contracts because of the industry's problems. Actually, non-union coal miners are now a major concern of the large com-

mercial coal companies, since these mines (usually small and marginal operations) have grown to account for roughly a quarter of total output and contribute considerably to price weakness, particularly in the East and South.

The labor agreement signed in 1964 calls for payment of a double welfare and retirement fund royalty by major coal companies for any non-union coal marketed by them. The 1959 labor contract prohibited marketing of non-union coal, but little success was achieved as chronically unemployed miners are willing to accept low wages or work as independent contractors at non-union properties. These mines could not operate if they paid the union scale wage rates and the \$0.40 a ton royalty charge (this payment is larger than most companies' profit per ton and has led to omission or reduction in fund payments by some union mines under so-called "sweet-heart" contracts).

A new contract was being sought by union leaders in early 1966, but no settlement had been reached at the date of this writing. Union demands indicated a greater emphasis on fringe benefits and a total package somewhat in excess of the \$2 a day granted in the 1964 pact.

As over-all markets for soft coal contracted and companies stepped up mechanization to offset higher wages and thus maintain coal's competitive position, employment at the mines dropped drastically. Even with the resumption of the uptrend in output in recent years, employment figures have continued to decline. In 1964, the working force averaged 128,700 in soft coal, compared with a postwar peak (1948) of 442,000. In the anthracite region, employment in 1964 was down to about 13,000, or a decline of about 60% from that of 1955.

### Anthracite

#### Markets

The nation's anthracite industry, concentrated in four mining fields in eastern Pennsylvania, has been in a marked downtrend during the postwar years because of the loss of its major market, space heating, to oil and natural gas. Entry into industrial markets on a profitable and large-scale basis has not been possible for anthracite producers since the characteristics and geological formation of hard coal have precluded mechanization to the extent achieved in bituminous, and the resultant lowering of production costs. Production in 1965 declined 10% to 15.4 million tons. The total was 26% of 1926 output, only 15% of the record 100 million tons of 1917, and was roughly the same as anthracite production in 1866.

The majority of anthracite output is still used for

space heating purposes in its main marketing area north of the Potomac and Ohio rivers and east of the Mississippi. This is where anthracite has lost its position, now accounting for about 8.5% of total fuels consumed in these states as compared with 83% in 1929. Oil and natural gas increased their respective shares of this market to about 64% and 28%, compared with 8% and 5% in 1929. Further losses seem probable for anthracite.

Cheap transportation costs make anthracite an economic fuel for some electric utilities in Pennsylvania. In 1964, some 14% of total output was used by electric power stations. Part of the anthracite is obtained from dredging rivers (particularly the Susquehanna) where fine coal has accumulated as a result of dumping upstream by coal breakers. The dredged coal is quite cheap, as exemplified by the

Holtwood steam station of PENNSYLVANIA POWER & LIGHT, where dredged coal costs the company approximately \$2.70 a ton. As a result, fuel costs of this station are less than half those of the average Pennsylvania plant and are among the lowest of any of the nation's major steam plants.

Utilities offer little hope for the commercial coal producers, however, since the fine sizes used in boilers are not profitable except as a by-product or co-product of the higher-priced large sizes. The same is true of other industrial markets for fine anthracite, except where it can be obtained at little cost, as in dredging or recovery from waste banks.

A small amount of anthracite is added to bituminous in some ovens in making coke. Increased usage of anthracite is expected in pelletizing taconite but this market again requires the fine and least profitable sizes. Exports of anthracite have become more important, reflecting shipments to U.S. military forces in Europe, but fluctuated widely in recent years. Foreign demand seems likely to continue to be irregular. Canada is still an important though declining market.

### Production; Costs

Anthracite deposits generally are not level as are bituminous seams but run at angles which sometimes are over 60%. These pitched seams preclude utilization of continuous mining machines and other mechanical improvements that have contributed so

greatly to the marked gains in productivity in soft coal mines. Average output per man day in the hard coal fields is about 6.1 tons, compared with more than 17 tons in bituminous mines. This compares with 79 tons at the end of World War II; much of the improvement stems from a higher portion of production from strip mines as well as closing of high-cost underground properties. Strip mines now account for about 42% of output, underground mines for 34%, waste banks for 20%, and river dredging for 4%.

Hourly wages at anthracite mines average about a half dollar less than at soft coal mines but the union welfare and retirement fund payment is \$0.70 a ton, against \$0.40. Non-union production of anthracite is sizable.

After mining, the hard coal is processed in breakers or washeries which remove foreign matter and size the coal. The large sizes ranging from 3 inch broken grades to 1½-inch chestnut generally sell for over \$12 a ton at the mines. Pea and the larger buckwheat sizes are priced between \$9 and \$11 a ton, and the finest buckwheat sizes sell for less than \$3 a ton.

With wage, pumping (at underground mines), and material costs rising at a time when demand for the more profitable larger size coal is dropping, profits for fully unionized hard coal producers have become quite meager. No reversal of the present drab situation is seen.

## Composite Industry Data

\*Per Share Data in Terms of Standard & Poor's Stock Price Index

### Bituminous Coal Companies

The five companies used for this series of composite data are: Consolidation Coal Co., Island Creek Coal Co., North American Coal Co., Peabody Coal Co., and Pittston Co.

	1958	1959	1960	1961	1962	1963	1964	1965
Sales	58.58	92.35	84.51	70.67	78.05	82.78	87.53	100.49
Operating Income	8.89	11.18	10.85	11.32	11.92	12.67	14.64	15.87
Profit Margin %	11.34	12.11	12.84	16.02	15.27	15.79	16.73	15.49
Depreciation	4.60	4.28	4.42	4.19	4.54	4.70	5.25	5.39
Taxes	1.85	1.79	1.78	2.03	2.03	2.12	2.12	2.27
Earnings	4.28	4.39	4.65	4.70	5.04	5.78	6.89	8.06
Dividends	2.80	2.87	2.99	2.50	2.70	2.94	3.23	3.60
Earnings as a % Sales	6.45	4.77	5.50	6.65	6.47	6.95	7.87	8.02
Dividends as a % of Earnings	65.47	65.53	64.30	53.19	53.57	50.87	46.86	44.67
Price (1941-42=100)	22.04	41.59	52.70	57.27	50.78	51.17	52.53	52.71
Price/Earnings Ratio	41.41	71.82	53.21	53.67	60.11	60.96	105.04	101.51
Price/Dividend Ratio	15.17	15.43	18.00	20.70	20.00	18.93	17.81	13.97
Price/Book Value	14.39	15.67	15.83	13.97	13.71	14.01	15.35	12.64
Dividend Yield %	—High	4.36	2.99	5.14	3.61	3.91	2.62	2.68
—Low	3.41	3.29	3.17	3.57	2.68	2.55	2.43	2.50
Book Value	63.22	64.31	66.32	59.68	61.51	61.53	70.62	77.64
Return on Book Value %	4.77	2.67	2.68	2.88	2.89	2.43	2.43	10.46
Working Capital	22.16	22.53	21.51	14.71	20.25	17.50	18.44	17.63
Capital Expenditures	8.43	7.56	4.31	8.32	5.74	10.53	8.62	9.37

\*NOTE: All of the per share data herein are expressed in terms of the S & P Stock Price Index, i.e., stock prices, 1941-42=100. The yield is first obtained, this being the aggregate yield of all dividend payments divided by the year-end aggregate market values on which the stock price indexes are based. This yield is then applied to the year-end stock price index, giving the indicated per share dividends in terms of the S & P Stock Price Index. Thus, a yield of 5% applied to a stock price index of 100 would indicate dividend of \$5.00 "per share" on the index. All other items (totals) are then related to the total dividend payments. So, if total sales amount to \$100.00, the total dividend payments, then, with "per share" dividends at \$5.00 the indicated per share sales will be (10 x 5.00) \$5.00 in terms of the S & P Stock Price Index. For comparison between the various groups, all data are on a calendar year basis, corporate data being posted in the year in which the most months fall. Fiscal years ending June 30th are posted in the calendar year in which the fiscal year ends. Roundest assets, less current liabilities, without allowance for long-term debt. Peabody Coal added; United Electric Coal dropped.



## Comparative Company Analysis

### Revenue Record

**BITUMINOUS COAL**—Mergers distort the sales records of major producers, but the Midwestern steam coal producers (PEABODY, UNITED ELECTRIC, and AVONDALE) have outstanding records. Current sales of other

producers (mainly eastern) are below peaks attained during the Suez crisis, but a recent uptrend has been sparked by sharply higher demand in utility and export markets.

Sales (1937-59=100)

	Composite Data		BITUMINOUS												Other Coal	X Corp.
	Ind. Coal	Consol. Coal	Avon- dale	United	East- ern	Mid- west	North	Old	Peabody	Pitts- ton	Rich- mond	United	West- ern	Other		
			Coal	Coal	G. & P.	Creek	Am- er.	Don	Coal	Coal	Co.	Plin- k.	Elm- er	West- ern		
1935	102	102	102	102	111	81	77	104	204	122	83	127	132.62	88	---	---
1936	121	88	137	96	101	52	110	78	87	185	110	79	141	120.22	87	---
1937	122	84	125	92	89	N.A.	75	122	156	112	81	135	122.50	81	---	---
1938	116	77	120	87	89	84	101	77	79	130	105	75	120	---	87	---
1939	107	71	105	86	87	84	80	72	74	117	97	80	114	---	81	---
1940	107	85	103	81	92	91	70	84	81	118	89	82	101	---	81	---
1941	104	81	100	81	92	100	51	101	83	107	91	89	112	---	80	---
1942	94	59	85	91	85	---	106	115	96	71	87	97	87	---	85	---
1943	100	117	101	118	112	---	115	129	106	102	112	114	102	---	107	---
1944	96	86	86	108	104	---	128	130	116	85	103	114	91	---	113	---
1945	97	86	87	84	89	---	106	100	80	83	83	79	---	---	111	---

Average Net Sales in 1937-38 Base Period, in Millions of Dollars; Months indicate when fiscal year ends.

June Dec. Dec. Dec. '28. Dec. '29. Dec. Dec. Dec. '31. Dec. '32. Dec. '33. Dec. '34. Dec. '35. Dec. '36. Dec. '37. Dec. '38. Dec. '39.

Based on Stand- ard & Poor's In- dustry Group Stock Price In- dexes.

\*Of following calendar year. \*\*Years ended Apr. 30 of full calendar year prior to 1937; 1938-40=100. \*Eight mos. \*Includes Pocahontas Fuel Co. after 1953 and Traux-Tracer Coal after 1950. \*Incl. opera. of Sinclair Cos. after 1954. \*1958=100. \*Represent pro-forma comb. accts. of Island Creek Coal & Kruttschnitt Coal in 1953 and pe. yrs. \*Comb. accts. of Westmoreland Coal Co. and Stange Coal & Coal Co. \*In millions of dollars; other years not comparable. \*\*Yr. end. July 31 prior to 1953. N.A.—Not Available.

### Profit Margins

**BITUMINOUS COAL** — PEABODY and UNITED ELECTRIC COAL have the widest profit margins in the industry, reflecting operations of low-cost strip mines and the firm price structure for utility steam coal in midwestern markets (heavy development and other non-recurring costs were responsible for the 1965 decline in the latter's spreads). Mechanization and other cost

reduction moves by most eastern producers have countered increases in labor costs and some price weakness, with CONSOLIDATION's performance providing a notable ex- ample. Both PITTSBURGH and EASTERN GAS & FUEL have attractive records, the lower margins of the former reflecting the smaller return on sales of its non-coal operations.

Profit Margins (%)  
Operating Income as a Percentage of Revenues

	Composite Data		BITUMINOUS												Other Coal	X Corp.
	Ind. Coal	Consol. Coal	Avon- dale	United	East- ern	Mid- west	North	Old	Peabody	Pitts- ton	Rich- mond	United	West- ern	Other		
			Coal	Coal	G. & P.	Creek	Am- er.	Don	Coal	Coal	Co.	Plin- k.	Elm- er	West- ern		
1935	25.5	11.6	14.3	17.1	21.3	---	12.9	15.9	26.4	10.6	2.8	23.4	18.4	9.9	---	---
1936	15.9	14.7	11.8	15.9	16.5	12.1	13.5	15.4	20.4	27.5	10.1	2.2	24.9	17.1	11.2	---
1937	15.7	15.8	10.7	17.1	14.0	N.A.	13.0	16.4	21.5	26.8	9.0	5.5	24.5	14.7	8.2	---
1938	15.2	15.7	10.2	16.6	12.9	16.7	13.6	13.1	21.6	27.0	10.3	7.2	23.5	---	10.4	---
1939	14.7	14.0	11.5	17.0	12.2	11.0	14.3	14.4	20.1	27.4	10.3	---	23.2	---	11.6	---
1940	14.7	12.8	12.3	14.4	10.1	8.8	10.4	12.2	11.7	26.5	10.1	---	23.9	---	12.7	---
1941	15.2	12.1	12.3	14.3	7.7	8.4	7.8	8.0	8.5	25.9	8.8	1.9	25.6	---	9.6	---
1942	14.4	11.2	12.9	12.3	7.2	---	8.2	20.3	8.5	23.6	8.2	---	25.6	---	8.6	---
1943	15.6	12.0	11.8	12.9	7.4	---	4.4	11.3	8.7	18.3	7.1	2.1	27.8	---	4.9	---
1944	15.3	12.3	14.1	12.7	7.4	---	8.8	10.9	8.5	18.2	6.8	0.9	24.8	---	4.9	---
1945	15.9	14.1	12.8	15.3	8.0	---	11.1	8.3	17.8	8.4	7.3	18.4	---	---	3.9	---

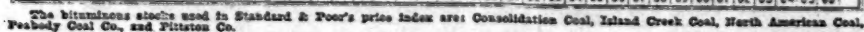
\*Based on consolidated revenues. \*Based on combined pro-forma figures in 1955 and prior years. \*8 mos. \*Reclassified. \*Based on combined data. \*Operating income is usually the balance left from revenues after deducting operating costs, selling general, and administrative expenses, local and state taxes; provision for bad debts and pensions; but before other income and before deducting depreciation charges, debt service charges, if any, Federal taxes, and any special reserves. N.A.—Not available.

### Net Income Ratios

**BITUMINOUS COAL**—PITTSBURGH has an above average long-term record of profits growth, reflecting increased trucking, and oil distribution profits through internal expansion and acquisitions, and more recently, the marked improvement in coal profits. Returns of the two largest producers, PEABODY and CONSOLIDATION, have shown the greatest gains, reflecting the superior

financial and reserve positions of both.

The 1963 drop in net of EASTERN GAS & FUEL reflects the exchange of its investment in Norfolk & Western R.R. for a nearly commensurate portion of its equity. The UNITED ELECTRIC decline in 1965 was due largely to the non-recurring factors that adversely affected its profit margins.



Net Income (1937-59=100)

[illegible]

Based on Standard & Poor's Industry Group Stock Price Index.

<sup>1</sup>Of full calendar year. <sup>2</sup>Years ended Apr. 30 of full calendar year prior to 1957; 1958-60=100. <sup>3</sup>Eight mos. 1956-59=100. <sup>4</sup>Based on combined data, 1959=100. <sup>5</sup>B: flow spec. credit. <sup>6</sup>In millions of dollars; other years not comparable. <sup>7</sup>July 31 prior to 1953. <sup>8</sup>Def.=Deficit.

**DEFINITION**—Net Income is simply the net profit after all charges as reported by the company

**Net Income As a Percentage of Revenues (%)**

Composite Data			STIMULANCY												
Year	Industries	Businesses	Attributable Coll.	Control.	Elitism	Labelled Control	Misuse Coll.	North Amer.	Coll. Policy	Political	Political	Def. & Coll. Coll.	West. Coll.	Bridge Coll.	X Corp.
1953	5.0	4.4	13.0	5.5	5.3	---	4.2	10.4	10.8	3.6	def.	11.3	8.4	5.8	---
1954	8.6	6.6	11.9	4.2	4.7	2.8	2.2	10.4	11.3	3.6	def.	11.3	8.4	5.8	---
1955	8.3	7.0	10.0	4.2	4.4	7.2	2.4	10.4	11.3	3.6	def.	11.3	8.4	5.8	---
1956	8.9	6.6	8.0	5.7	5.7	6.3	2.4	9.5	11.0	3.5	def.	11.3	8.4	5.8	---
1957	8.7	7.6	8.9	5.7	5.7	6.3	2.4	9.5	11.0	3.5	def.	11.3	8.4	5.8	---
1958	8.7	6.5	7.4	5.2	5.2	3.9	2.7	9.5	11.0	3.5	def.	11.3	8.4	5.8	---
1959	6.0	6.0	7.4	7.3	3.2	2.4	2.6	9.5	11.0	3.5	def.	11.3	8.4	5.8	---
1960	6.7	6.7	7.4	7.3	3.2	2.4	2.6	9.5	11.0	3.5	def.	11.3	8.4	5.8	---
1961	6.3	5.9	7.0	7.2	7.1	---	0.9	9.5	11.0	3.5	def.	11.3	8.4	5.8	---
1962	6.4	6.7	6.5	6.6	6.6	---	2.9	4.4	5.3	6.6	3.0	3.6	11.0	11.0	---
1963	6.4	6.7	6.5	6.6	6.6	---	2.9	4.4	5.3	6.6	3.0	3.6	11.0	11.0	---

Based on Standard & Poor's Industry Group Stock Price Index.

data. <sup>a</sup>After spec. chgs. <sup>b</sup>Not comparable in this and prior years.

**DEFINITION**—Net Income is simply the net profit after all charges as reported by the company.

### Dividend Policies

Coal producers as a group have followed fairly conservative policies, although maintenance of payments in periods of cyclically reduced earnings resulted in high payouts in some years. Capital needs for expanding capacity

have limited the payouts of some companies. EASTERN GAS & FUEL eliminated cash payments in 1963, but has followed a policy of steadily reducing its number of shares outstanding through purchases.

Company Data		Divisions on Domestic Sales												Total		
Year	Consolidated	Chemicals	Agriculture	Coal	Food	Textile	Island	Metals	North	Old B. & F.	Periodic	Plastics	Rock	Timber	Wool	Yarn
	Income	Income	Income	Income	Income	Income	Income	Income	Income	Income	Income	Income	Income	Income	Income	Income
1951	22.3	22.9	20.1	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1952	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1953	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1954	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1955	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1956	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1957	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1958	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1959	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1960	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1961	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1962	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1963	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1964	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1965	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1966	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1967	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1968	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1969	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1970	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1971	22.7	20.0	21.3	55.2	6.7	63.0	60.3	28.3	46.5	78.1	32.2	29.2	43.9	47.7	46.2	46.2
1972	22.7	20.0	21.3	55.2	6.7	63.0										

\*Dividends paid despite loss. \*Dividends exceeded net profits. \*Paid 2% in stk. \*Based on consolidated earnings. \*Plus 5% in stk.; also paid 3% in stk. Jan. 31, 1958. \*Pd. 2 1/2% in stk. in 1963 and 3% in 1964 and 1965. \*Excludes Kentucky Coal in 1963 and prior years. \*Plus 2 1/2% in stock. \*\*Not comparable in this and prior years.

Multiples for the group have been close to those of the 425 Industrials composite in most years, reflecting the industry's sensitivity to business activity. The overall decline in recent years appears to stem from concern over the longer-range effects of competition from other energy sources in utility markets. The above average valuation granted PEABODY stems from the significant growth potential in utility demand in the company's marketing area.

COMMODITIES										FINANCIAL										
Cotton		Cotton—Strap		Cotton—Seed		Cotton—Lint		Cotton—Wool		Cotton—Wool		Cotton—Wool		Cotton—Wool		Cotton—Wool		Cotton—Wool		
High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	
1961	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1962	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1963	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1964	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1965	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1966	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1967	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1968	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1969	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1970	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1971	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1972	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1973	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1974	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1975	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1976	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1977	16.8	16.4	17.8	16.3	17.4	16.5	11.5	8.4	12.7	14.9	12.9	11.1	16.8	12.2	11.7	16.8	12.2	11.7	16.8	12.2
1978	16.8	16.4	17.8	16.3	17.4	16.5	11.5													

Based on Standard & Poor's Industry Group Stock Price Index.

Year	Duct.		United Elec.		Westinghouse		Singer		K. Corp.	
	High	Low	High	Low	High	Low	High	Low	High	Low
1945	def.	def.	13.9	11.5	12.0	8.0	28.7	11.9	---	---
1946	def.	def.	11.5	9.3	9.3	6.9	12.3	9.3	---	---
1947	def.	def.	17.5	14.4	18.7	9.5	18.7	12.7	---	---
1948	10.0	5.3	17.5	11.4	---	---	13.3	9.9	---	---
1949	10.8	9.3	17.3	11.4	---	---	16.5	9.7	---	---
1950	def.	def.	16.7	11.2	---	---	14.4	9.3	---	---
1951	def.	def.	14.0	10.9	---	---	9.4	7.1	---	---
1952	def.	def.	15.1	14.8	---	---	9.4	4.3	---	---
1953	12.9	7.4	11.8	8.2	---	---	20.4	7.9	---	---
1954	6.9	3.2	14.8	8.5	---	---	10.0	4.5	---	---
1955	def.	def.	22.3	15.7	---	---	13.3	8.4	---	---

<sup>1</sup>Ratio over 50 not calculated. <sup>2</sup>Excludes Kentucky Coal in 1953 and prior years. <sup>3</sup>Data not comparable in this and prior years.

[illegible]

Based on Standard & Poor's Industry Group Stock Price Indexes.

Year	Dutch.		United		Westmarched		Zeigler		K Casp.	
	High.	Low	High	Low	High	Low	High	Low	High	Low
1865	Nil	Nil	4.3	2.5	3.5	3.7	2.9	1.6	---	---
1866	Nil	Nil	4.0	2.3	3.5	4.1	3.6	3.3	---	---
1867	0.9	0.7	4.0	---	4.1	1.2	3.5	3.0	---	---
1868	2.9	1.7	4.0	2.8	---	---	3.7	2.5	---	---
1869	Nil	Nil	3.5	2.4	---	---	3.2	2.6	---	---
1870	Nil	Nil	3.4	---	---	---	3.1	4.2	---	---
1871	Nil	Nil	3.4	4.2	---	---	4.6	2.7	---	---
1872	3.0	2.7	7.1	4.8	---	---	3.6	1.7	---	---
1873	4.0	2.4	5.2	---	---	---	10.7	2.2	---	---
1874	2.6	1.3	5.2	3.7	---	---	3.3	3.9	---	---
1875	Nil	Nil	4.3	4.3	---	---	6.5	4.4	---	---

\*Paid 2% in stock, 1941, 2.2% in stk. in 1942 and 3% in 1944 and 1945. \*Excludes Kentucky Coal in 1943 and prior years. \*Data not comparable in this and prior years.

Years to June		Net		Our Ratio	
		Cost	One	Assess'd	Ratio
		Per	Share	Assess'd	Ratio
1905	7.00	8.13	3.85	4.88	54
1904	7.03	7.03	3.77	4.26	50
1903	6.63	6.63	3.61	4.26	50
1902	6.43	6.43	3.61	4.26	50
1901	6.23	6.23	3.61	4.26	50
1900	6.03	6.03	3.61	4.26	50
1899	5.83	5.83	3.61	4.26	50
1898	5.63	5.63	3.61	4.26	50
1897	5.43	5.43	3.61	4.26	50
1896	5.23	5.23	3.61	4.26	50
1895	5.03	5.03	3.61	4.26	50
1894	4.83	4.83	3.61	4.26	50
1893	4.63	4.63	3.61	4.26	50
1892	4.43	4.43	3.61	4.26	50
1891	4.23	4.23	3.61	4.26	50
1890	4.03	4.03	3.61	4.26	50
1889	3.83	3.83	3.61	4.26	50
1888	3.63	3.63	3.61	4.26	50
1887	3.43	3.43	3.61	4.26	50
1886	3.23	3.23	3.61	4.26	50
1885	3.03	3.03	3.61	4.26	50
1884	2.83	2.83	3.61	4.26	50
1883	2.63	2.63	3.61	4.26	50
1882	2.43	2.43	3.61	4.26	50
1881	2.23	2.23	3.61	4.26	50
1880	2.03	2.03	3.61	4.26	50
1879	1.83	1.83	3.61	4.26	50
1878	1.63	1.63	3.61	4.26	50
1877	1.43	1.43	3.61	4.26	50
1876	1.23	1.23	3.61	4.26	50
1875	1.03	1.03	3.61	4.26	50
1874	.83	.83	3.61	4.26	50
1873	.63	.63	3.61	4.26	50
1872	.43	.43	3.61	4.26	50
1871	.23	.23	3.61	4.26	50
1870	.03	.03	3.61	4.26	50

Of the following calendar year.

YEARS TO DEC.	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

\*Fiscal year ended Jan. 31 of the following calendar year in 1954, '9 Mos. ended Dec. 31, 'Nat. spec. rev. of \$0.15 a slr. in 1953, \$0.35 in 1964 & \$0.15 in 1965.

[illegible]

Plus 3% in 1954 and 4% in 1957. Incl. non-recur. gain of \$0.50 sh. in 1958; ad. spec. div. of \$0.00 in 1962. Yield 2.5% sh. Paid 0% div.

HELAND CREEK COAL CO. (CONTRAVERS)		YEARS TO BUD. IN	
Debt: \$1,000,000; Curr. 2,250,000 Bks. 20.00 Pct.			
1921	125.00	125.00	125.00
1922	125.00	125.00	125.00
1923	125.00	125.00	125.00
1924	125.00	125.00	125.00
1925	125.00	125.00	125.00
1926	125.00	125.00	125.00
1927	125.00	125.00	125.00
1928	125.00	125.00	125.00
1929	125.00	125.00	125.00
1930	125.00	125.00	125.00
1931	125.00	125.00	125.00
1932	125.00	125.00	125.00
1933	125.00	125.00	125.00
1934	125.00	125.00	125.00
1935	125.00	125.00	125.00
1936	125.00	125.00	125.00
1937	125.00	125.00	125.00
1938	125.00	125.00	125.00
1939	125.00	125.00	125.00
1940	125.00	125.00	125.00
1941	125.00	125.00	125.00
1942	125.00	125.00	125.00
1943	125.00	125.00	125.00
1944	125.00	125.00	125.00
1945	125.00	125.00	125.00
1946	125.00	125.00	125.00
1947	125.00	125.00	125.00
1948	125.00	125.00	125.00
1949	125.00	125.00	125.00
1950	125.00	125.00	125.00
1951	125.00	125.00	125.00
1952	125.00	125.00	125.00
1953	125.00	125.00	125.00
1954	125.00	125.00	125.00
1955	125.00	125.00	125.00
1956	125.00	125.00	125.00
1957	125.00	125.00	125.00
1958	125.00	125.00	125.00
1959	125.00	125.00	125.00
1960	125.00	125.00	125.00
1961	125.00	125.00	125.00
1962	125.00	125.00	125.00
1963	125.00	125.00	125.00
1964	125.00	125.00	125.00
1965	125.00	125.00	125.00
1966	125.00	125.00	125.00
1967	125.00	125.00	125.00
1968	125.00	125.00	125.00
1969	125.00	125.00	125.00
1970	125.00	125.00	125.00
1971	125.00	125.00	125.00
1972	125.00	125.00	125.00
1973	125.00	125.00	125.00
1974	125.00	125.00	125.00
1975	125.00	125.00	125.00
1976	125.00	125.00	125.00
1977	125.00	125.00	125.00
1978	125.00	125.00	125.00
1979	125.00	125.00	125.00
1980	125.00	125.00	125.00
1981	125.00	125.00	125.00
1982	125.00	125.00	125.00
1983	125.00	125.00	125.00
1984	125.00	125.00	125.00
1985	125.00	125.00	125.00
1986	125.00	125.00	125.00
1987	125.00	125.00	125.00
1988	125.00	125.00	125.00
1989	125.00	125.00	125.00
1990	125.00	125.00	125.00
1991	125.00	125.00	125.00
1992	125.00	125.00	125.00
1993	125.00	125.00	125.00
1994	125.00	125.00	125.00
1995	125.00	125.00	125.00





GX 27

KIRKLAND, ELLIS, HODSON, CHAFFETZ &amp; MASTERS

PRUDENTIAL PLAZA

CHICAGO, ILLINOIS 60601

TELEPHONE RAOULPH 6-2323

WASHINGTON OFFICE  
WORLD CENTER BUILDING

March 26, 1968

John T. Cusack, Esquire  
Attorney, Midwest Office  
Antitrust Division  
Department of Justice  
Room 2534 United States Courthouse  
219 South Dearborn Street  
Chicago, Illinois 60604

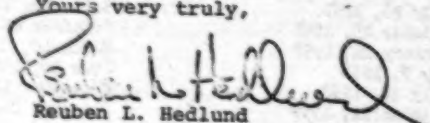
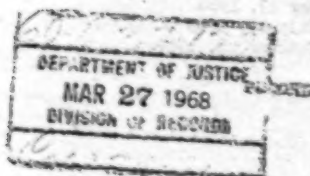
Re: United States v. General Dynamics, et al.

Dear Mr. Cusack:

In connection with paragraph four of my letter to you of March 20, 1968, I enclose herewith the additional information requested with respect to payment of dividends by UEC. I am advised that UEC neither declared nor paid any dividends in 1967.

In connection with paragraph seven of my letter, I also enclose a copy of the proxy statement issued in connection with the acquisition of Material Service Corporation by General Dynamics.

Yours very truly,

  
Reuben L. HedlundRLH:ew  
Enclosures

Dividends Declared & Paid by

THE UNITED ELECTRIC COAL COMPANIES  
DURING THE PERIOD JANUARY 1, 1950  
TO DECEMBER 31, 1967

<u>Date Declared</u>	<u>Date Paid</u>	<u>Dividend Per Share</u>
January 20, 1950	March 10, 1950	\$.25
May 19, 1950	June 12, 1950	.25
July 21, 1950	September 11, 1950	.25
October 27, 1950	December 20, 1950	Stock Dividend-One (1) Share for each Five (5) Shares Held.
October 27, 1950	December 1, 1950	.25
January 19, 1951	March 9, 1951	.25
April 20, 1951	June 11, 1951	.25 Reg.-25¢ extra.
July 20, 1951	September 10, 1951	.25 Reg.-25¢ extra.
October 26, 1951	December 10, 1951	.25 Reg.-25¢ extra.
January 18, 1952	March 10, 1952	.25 Reg.-25¢ extra.
April 18, 1952	June 10, 1952	.25 Reg.-25¢ extra.
July 14, 1952	September 10, 1952	.25 Reg.-25¢ extra.
October 31, 1952	December 10, 1952	.25
January 8, 1953	March 10, 1953	.25
May 15, 1953	June 10, 1953	.25
July 10, 1953	September 10, 1953	.25
October 30, 1953	December 10, 1953	.25
January 8, 1954	March 10, 1954	.25
May 14, 1954	June 10, 1954	.25
July 9, 1954	September 10, 1954	.25
October 29, 1954	December 10, 1954	.25
January 14, 1955	March 10, 1955	.25
May 13, 1955	June 10, 1955	.25
July 15, 1955	September 9, 1955	.25
October 28, 1955	December 9, 1955	.25
January 13, 1956	March 9, 1956	.25
May 11, 1956	June 8, 1956	.25
July 13, 1956	September 10, 1956	.25
October 26, 1956	December 10, 1956	.25
January 11, 1957	March 8, 1957	.25
May 17, 1957	June 10, 1957	.40
July 26, 1957	September 10, 1957	.40
October 25, 1957	December 10, 1957	.40
January 24, 1958	March 10, 1958	.40
May 9, 1958	June 10, 1958	.40
July 28, 1958	September 10, 1958	.40
October 31, 1958	December 10, 1958	.40
January 9, 1959	March 10, 1959	.40
May 8, 1959	June 10, 1959	.40
July 10, 1959	September 10, 1959	.40
October 30, 1959	December 10, 1959	.40
January 13, 1960	March 10, 1960	.40
May 13, 1960	June 10, 1960	.40
July 15, 1960	September 9, 1960	.40
October 28, 1960	December 9, 1960	.40

Dividends Declared & Paid By

THE UNITED ELECTRIC COAL COMPANIES  
DURING THE PERIOD JANUARY 1, 1950  
TO DECEMBER 31, 1967

PAGE TWO

<u>Date Declared</u>	<u>Date Paid</u>	<u>Dividend Per Share</u>
January 13, 1961	March 10, 1961	\$ .10
May 12, 1961	June 9, 1961	.10
July 14, 1961	September 8, 1961	.10
September 8, 1961	December 3, 1961	.10
January 12, 1962	March 9, 1962	.10
May 18, 1962	June 9, 1962	.15
July 13, 1962	September 10, 1962	.15
September 14, 1962	December 10, 1962	.15
January 11, 1963	March 8, 1963	.15
May 10, 1963	June 10, 1963	.15
July 12, 1963	September 10, 1963	.15
September 13, 1963	December 10, 1963	.15
January 10, 1964	March 10, 1964	.15
May 8, 1964	June 10, 1964	.15
July 10, 1964	September 10, 1964	.15
September 11, 1964	December 10, 1964	.15
February 12, 1965	March 10, 1965	.15
April 16, 1965	June 10, 1965	.15
August 13, 1965	September 10, 1965	.15
October 8, 1965	December 10, 1965	.15
February 14, 1966	March 10, 1966	.15
April 15, 1966	June 10, 1966	.15
August 12, 1966	September 9, 1966	.15
November 9, 1966	November 10, 1966	\$6,000.00
Year - 1967	None	None

## KIRKLAND, ELLIS, HODSON, CHAFFETZ &amp; MASTERS

PRUDENTIAL PLAZA

CHICAGO, ILLINOIS 60601

TELEPHONE RAOULPH 5-1220

WASHINGTON OFFICE  
WORLD CENTER BUILDING

May 3, 1968

John T. Cusack, Esquire  
 Attorney, Midwest Office  
 Antitrust Division  
 Department of Justice  
 Room 2634 United States Courthouse  
 219 South Dearborn Street  
 Chicago, Illinois 60604

Re: United States v. General  
 Dynamics, et al.

Dear Mr. Cusack:

Pursuant to paragraph 18 of the Government's draft Motion to Produce and paragraph 4 of my letter to you of March 20, 1968, this is to advise you that the following loans were made by UEC to General Dynamics between January 1, 1950 and present time: (1) on September 22, 1966 a loan in the amount of \$1 million at 6 per cent interest due December 30, 1966; and (2) a loan in the amount of \$1 million on October 31, 1966 at 6 per cent interest due December 30, 1966.

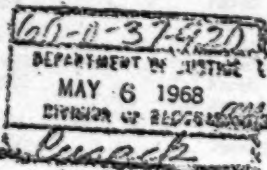
Both loans were repaid on December 29, 1966. UEC has never made any loans to either Freeman or Material Service.

I must correct information transmitted to you with my letter of March 26, 1968. I am now advised that UEC declared and paid, on January 24 and 25, 1968, respectively, a dividend in the amount of \$1,500,000 to General Dynamics. No other dividends were declared or paid during 1967.

I apologize for the error, which was caused by the failure to include dividends paid by the "new" UEC as well as those by "old" UEC.

Yours very truly,

*Reuben L. Hedlund*  
 Reuben L. Hedlund



RLH:ed

EXECUTIVE OFFICE OF THE PRESIDENT/BUREAU OF THE BUDGET



# STANDARD INDUSTRIAL CLASSIFICATION MANUAL

1967

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PREPARED BY THE OFFICE OF STATISTICAL STANDARDS



## Major Group 12.—BITUMINOUS COAL AND LIGNITE MINING

### *The Major Group as a Whole*

This major group includes establishments primarily engaged in producing bituminous coal or lignite. Included are mining operations and preparation plants (also known as cleaning plants and washeries) whether or not such plants are operated in conjunction with the mines served. The production of coal fuel briquettes and packaged fuel is classified in Major Group 29, and the production of manufactured gas from coal in Industry 4925.

Group No. Industry No.

### 121 BITUMINOUS COAL AND LIGNITE MINING

#### 1211 Bituminous Coal

Establishments primarily engaged in producing bituminous coal or in developing bituminous coal mines. This industry includes underground mining, auger mining, strip mining, and coal cleaning, crushing, screening, and sizing plants, whether or not operated in conjunction with the mines served.

Cleaning plants, bituminous coal  
Coal mining, bituminous  
Crushing plants, bituminous coal  
Hard coal mining, except Pennsylvanian anthracite  
Screening plants, bituminous coal

Semianthracite mining  
Strip mining, bituminous coal: except on a contract, fee, or other basis  
Subbituminous coal mining  
Washeries, bituminous coal

#### 1212 Lignite

Establishments primarily engaged in producing lignite or in developing lignite mines.

Brown coal mining

Lignite mining

#### 1213 Bituminous Coal and Lignite Mining Services

Establishments primarily engaged in performing for others on a contract, fee, or other basis bituminous coal and lignite mining services, such as the removal of overburden, strip and auger mining, drilling, shaft sinking, and mine tunneling.

Auger mining services, bituminous or lignite: on a contract, fee, or other basis  
Bituminous coal mining services: on a contract, fee, or other basis  
Draining or pumping bituminous coal and lignite mines: on a contract, fee, or other basis  
Drilling for bituminous coal and lignite mining: on a contract, fee, or other basis  
Lignite mining services: on a contract, fee, or other basis  
Mine tunneling, bituminous coal and lignite: on a contract, fee, or other basis

Removal of overburden for bituminous coal: on a contract, fee, or other basis  
Sinking shafts for bituminous coal and lignite mining: on a contract, fee, or other basis  
Strip mining, bituminous coal: on a contract, fee, or other basis  
Stripping services, lignite: on a contract, fee, or other basis  
Tunneling, bituminous coal and lignite mining: on a contract, fee, or other basis

## Appendix D

# Criteria for Recognizing Industries in the Standard Industrial Classification

### General Comments

The Standard Industrial Classification defines industries in accordance with the existing structure of the American economy. An industry is a grouping of establishments primarily engaged in the same or similar lines of economic activity. In the manufacturing division, the line of activity is generally defined in terms of the product made, materials consumed, or process of manufacture used.

Sometimes a common process of manufacture may result in an industry of considerable size and a wide variety of products; e.g., meat packing, and blast furnaces, steel works and rolling mills. In other instances, the production of an industry may be limited to a single product, such as chewing gum or wallpaper. To be recognized as an industry each group of establishments must have significance from the standpoint of number of production workers, value added by manufacture, value of shipments, and number of establishments. Size of an industry is not the sole criterion for its recognition; it is also important that an industry comprise a group of establishments of which the output of products or processes defining the industry (primary products of the industry) account for a relatively high proportion of (a) the total shipments or receipts of the industry (specialization ratio), and (b) the total output by all industries of the products or processes which are primary to the industry (coverage ratio).

The quantitative standards for size, specialization and coverage for manufacturing industries that have been established are described in subsequent paragraphs. There may be a few instances where other important considerations will warrant the establishment or retention of an industry which does not satisfy size, specialization, and coverage criteria.

As a result of the application of these criteria, there will be "leftover" segments of American industry. Lines of business activity which do not satisfy the criteria for the recognition of an industry, if they are very closely associated with the activities of another industry, may be included with that industry. This may have the effect of reducing the specialization ratio of the industry with which this line of activity is combined, but such a procedure may be preferable

to including the line of activity in a "miscellaneous" or "not elsewhere classified" category for that particular three digit group. Each case must be evaluated on its own merits. It may be better to allow a small element of impurity to be introduced into a given four digit industry by associating it with a line of activity which is quite closely related rather than to increase the size of the "miscellaneous" category for the three digit group by adding another line of activity, since the "miscellaneous" categories are heterogeneous and are not representative of any specific industry.

### Standards for Criteria

As a result of the Census of Manufactures, data (number of establishments, employment, value added, etc.) are available for manufacturing as a whole. Knowing the number of industries, values for each desired item have been calculated for an "average" industry. These values for the "average" industry were used as the basis for measuring size. For each desired item, a number of points were awarded an industry, depending on the industry's relationship to the size of the "average" industry. The points awarded were equal to the percent of the "average" industry. The points for the various items were averaged with a system of weights to secure the final score for an industry. The score determines whether the industry is to be considered sizable or not.

### Size Criteria:

Size was measured by a comparison of four items as follows:

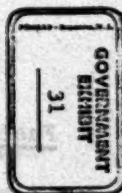
1. Number of employees
2. Value added by manufacture
3. Value of shipments
4. Number of establishments

Number of employees and value added are recognized as being more significant and reliable measures of industry size than are value of shipments and number of establishments. Value of shipments includes the value created in other industries or other economic divisions such as Agriculture, etc., and does not measure value of income produced in the specific manufacturing industry. In some instances, the large duplication of value of shipments within an industry makes publication of the figure meaningless. A count of establishments in each industry is of limited significance as it treats both large and small establishments as of equal importance. In addition, the derivation of an "average" number of establishments per industry reflects, to a large extent, the very numerous plants in a relatively few industries. For example, five industries (Bakeries, Sawmills, Newspapers, Commercial Printing, and Concrete Products) account for approximately 22% of the number of establishments, but only 8% of the number of employees and value added by manufacture.

Generally speaking, an existing Standard Industrial Classification industry is considered as sizable if it attains a point score of 10 or higher. The point

**The Consumption of Fuel by Steam-Electric Plants  
in the Eastern Interior Province Sales Area  
for the Years 1960-1967**

Year	Notes	Per Cent of Consumption in BTU		
		Coal	Oil *	Gas *
1960	1	93.8	00.2	06.0
1961	2	90.5	00.1	09.4
1962	3	90.2	00.1	09.7
1963	4	90.4	00.1	09.5
1964	5	89.9	00.1	10.0
1965	6	91.4	00.1	08.5
1966	7	93.1	00.2	06.7
1967	8	92.2	00.2	07.7



- \* In Kurtz Deposition Exhibits 1 and 2, which cover the years 1960 and 1961, the BTU values for gas and oil are not shown for each generating station as is done in Kurtz Dep. Ex. 3-8. In the "Explanation of Tables" in Kurtz Dep. Ex. 1 and 2 appears this statement:

"The BTU of fuel oil and of natural gas are not shown as the values in the great majority of cases were fairly well standardized, i.e., at between 147 and 153 thousand BTU per gallon of oil, and 950 to 1,050 BTU per cubic foot of natural gas."

The averages of 147 and 153 or 150 thousand BTU per gallon of oil, and 950 and 1,050 or 1,000 BTU cubic foot of natural gas were used to convert gallons of oil and cubic feet of gas to BTUs for the years 1960 and 1961.

GX 32

**CONSUMPTION OF FUEL (SHOWN IN MILLIONS OF BTU'S)  
BY PORTLAND CEMENT PLANTS IN ILLINOIS IN 1967**

<u>Fuel</u>	<u>Number of BTU's (In Millions)</u>	<u>Each Fuel as Per Cent of Total</u>
Coal	11,338,430	94.6
Oil	134,365	1.1
Gas	<u>517,710</u>	4.3
Total	11,990,505	100.0

**Source: Letters from cement companies and answers to questionnaires.**



Revised

CONSUMPTION OF FUEL (SHOWN IN MILLIONS OF BTU'S) BY  
PORTLAND CEMENT PLANTS IN EASTERN INTERIOR COAL  
PROVINCE SALES AREA IN 1967

<u>Fuel</u>	<u>Number of BTU's (In Millions)</u>	<u>Each Fuel as Per Cent of Total</u>
Coal	48,025,650	74.1
Oil	324,544	.5
Gas	<u>16,424,242 */</u>	25.4
Total	64,774,436	100.0

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\*/ Approximately 96.3 per cent of gas consumption was on an interruptible basis.

Source: Letters from cement companies and answers to questionnaires.

GOVERNMENT  
EXHIBIT

34

GENERAL DYNAMICS CORPORATION  
INCOME STATEMENTINCOME STATEMENT  
Coal Companies  
DATE 12/31/68  
\*\*\*\*\*

LINE		AMOUNT	
1	MONTH		
2	NET SALES	956	855
3	COST OF SALES	1 415	489
4			
5	OPERATING PROFIT (LOSS)	(458)	634
6	OTHER INCOME (EXPENSE)		
7	EARNINGS FROM UNCONSOLIDATED SUBSIDIARIES		
8	INTEREST INCOME		26
9	INTEREST EXPENSE		-
10	INTERCOMPANY/INTERDIVISION INCOME (EXPENSE)		-
11	MISCELLANEOUS NET	102	135
12			
13	PRETAX PROFIT (LOSS)	(356)	473
14	PROVISION FOR INCOME TAXES	(120)	000
15	NET INCOME (LOSS)	(236)	473
16			
17	SALES - INTERCOMPANY	12	778
18	- INTERDIVISION		-
19			
20	INVESTMENT CREDIT	(36)	040
21			
22			
23	YEAR TO DATE		
24	NET SALES	22 940	876
25	COST OF SALES	19 289	847
26			
27	OPERATING PROFIT (LOSS)	3 651	029
28	OTHER INCOME (EXPENSE)		-
29	EARNINGS FROM UNCONSOLIDATED SUBSIDIARIES		-
30	INTEREST INCOME	3	538
31	INTEREST EXPENSE		-
32	INTERCOMPANY/INTERDIVISION INCOME (EXPENSE)		-
33	MISCELLANEOUS NET	354	426
34			
35	PRETAX PROFIT (LOSS)	4 008	993
36	PROVISION FOR INCOME TAXES	1 327	000
37	NET INCOME (LOSS)	2 681	993
38			
39	SALES - INTERCOMPANY	900	082
40	- INTERDIVISION		-
41			
42	INVESTMENT CREDIT	21	960
43			
44	SALES - RENEGOTIABLE		-
45	- NONRENEGOTIABLE	22 940	876
46	TOTAL (LINE 25)	22 940	876
47			
48	STATISTICAL DATA		
49	NET SALES (LINE 25)	22 940	876
50	LESS: SUPPORT DIVISIONS SALES		-
51	DIVISION SALES BASE	22 940	876
52			
53	DEPRECIATION, AMORTIZATION, ETC.	2 692	454
54	DEPLETION IN EXCESS OF COST	1 363	069
55	DIVIDENDS RECEIVED - FROM SUBSIDIARIES		
56	- OTHERS		100
57			
58			
59			

REPORT FROM THE United Electric  
Coal Companies  
12/31/68

## GENERAL DYNAMICS CORPORATION

## BALANCE SHEET

The United Electric  
Coal CompaniesDATE  
12/31/68

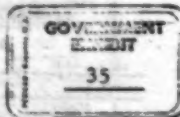
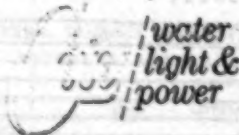
(DOLLARS)		CLASSIFICATION		AMOUNT	
LINE					
1	CASH			116	080
2	MARKETABLE SECURITIES				
3	RECEIVABLE - GOVERNMENT				
4	- TRADE (LESS RESERVES)				
5	UNREIMBURSED EXPENDITURES		1	274	166
6	INVENTORIES				
7	LESS: ADVANCE AND PROGRESS PAYMENTS		2	797	102
8	NET INVENTORIES				
9	PREPAID EXPENSES		2	797	102
10	INTERCOMPANY RECEIVABLES			426	013
11			7	919	158
12					
13	TOTAL CURRENT ASSETS		12	532	519
14					
15	INVESTMENTS (COST) AND ADVANCES - SUBSIDIARIES				
16	EQUITY, IN EXCESS OF COST - UNCONSOL SUBSIDIARIES				
17	NON-CURRENT RECEIVABLES AND OTHER ASSETS			750	885
18	EQUIPMENT LEASED TO OTHERS				
19	PROPERTY, PLANT AND EQUIPMENT - GROSS		55	906	801
20	RESERVE FOR DEPRECIATION AND AMORTIZATION		40	441	861
21	PROPERTY, PLANT AND EQUIPMENT - NET		15	464	940
22					
23	TOTAL ASSETS		28	748	344
24					
25	NOTES PAYABLE TO U.S. BANKS				
26	NOTES PAYABLE TO CANADIAN BANKS				
27	COMMERCIAL PAPER				
28	DRAFTS PAYABLE				
29	CURRENT INSTALLMENTS ON LONG-TERM DEBT				
30	ACCOUNTS PAYABLE AND ACCRUED EXPENSES		1	231	426
31	PRODUCTION PAYMENTS - NET OF TAXES				
32	ACCRUED SALARIES AND WAGES			416	120
33	U.S. AND CANADIAN INCOME TAXES			160	459
34	CUSTOMERS' DEPOSITS				
35	DIVIDENDS PAYABLE				
36	INTERCOMPANY PAYABLES				
37	Accounts Payable Residual Shareholders			8	900
38	TOTAL CURRENT LIABILITIES		1	816	905
39	LONG-TERM DEBT (LESS CURRENT PORTION)				
40	OTHER LIABILITIES				
41	DEFERRED REVENUE FROM ASSIGNED LEASES				
42	DEFERRED INCOME TAX				
43	MINORITY INTERESTS				
44	INTERDIVISION ACCOUNTS				
45					
46	UNREALIZED PROFIT - INTERCOMPANY				
47	- INTERDIVISION				
48					
49	SHARE OWNER'S EQUITY				
50	CAPITAL STOCK			1	000
51	TREASURY STOCK				
52	CAPITAL SURPLUS		5	273	454
53					
54	EARNED SURPLUS, BEGINNING OF YEAR		18	974	962
55	NET INCOME (LOSS)		2	681	993
56	DIVIDENDS - CAPITAL STOCK				
57					
58	EARNED SURPLUS, END OF PERIOD		21	656	955
59	TOTAL SHARE OWNERS' EQUITY		26	931	679
60	TOTAL LIABILITIES AND EQUITY		28	748	344

REPORT FROM

The United Electric  
Coal Companies

12/31/68

GENERAL OFFICES  
MUNICIPAL BUILDING  
SPRINGFIELD, ILLINOIS 62701



JOHN H. HUNTER  
COMMISSIONER OF PUBLIC PROPERTY  
Telephone 566-5721, Area Code 217

March 21, 1968

Department of Justice  
Room 2634 United States Courthouse  
Chicago, Illinois 60604

Attention: Mr. John T. Cusack

RE: United States v. General Dynamics  
Corporation et al., Civil No.  
67 C 1632 (N. D. Illinois)

Dear Sir:

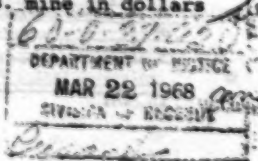
As our Lakeside Generating Station is a coal burning plant we have no answers for paragraphs 2, 3 and 4. Data for our answer to paragraph 1 is attached herewith.

An engineering answer to a legally phrased question has presented unanswerable questions. You ask, "Please state the annual BTU and kilowatt hour output derived from each supplier, and the percentage of total (all sources) BTU and kilowatt hour output each supplier represents for each of the years 1964 through 1967."

We buy coal from several suppliers under contracts for terms from one to three years. Each contract has the following:

1. Guaranteed cost in dollars per ton F.O.B. mine.
2. Cost of haulage in dollars per ton - mine to Lakeside.
3. Guaranteed BTU's per pound.
4. Guaranteed moisture content.
5. Guaranteed ash content
6. Guaranteed sulphur content.

from item 1 and 3 the guaranteed cost F.O.B. mine in dollars per million BTU can be calculated.



Department of Justice  
Page 2  
March 21, 1968

All coal is sampled as received at Lakeside, analyzed by a commercial testing firm for BTU, moisture, ash and sulphur. Based on contract stated per missable percentage deviations of each value of the analysis the cost of that shipment of coal is determined to be: (a) contract price, (b) contract price plus a bonus, or (c) contract price minus a penalty. If either party is not satisfied with the pricing because of a bonus or penalty a referee sample is sent to another commercial firm and the pricing is then recalculated.

Our experience has been for all suppliers that there are few bonuses and many penalties. As an example for 1967 only on the semi-monthly coal shipments and billings:

Peabody had 3 bonuses and 4 penalties,  
Freeman had no bonuses and 12 penalties,  
Little Dog had no bonuses and 24 penalties,  
Royal Fuel had no bonuses and 24 penalties.

It should be noted that these bonus or penalty determinations are based on BTU, moisture, ash and sulphur, hence the existence of a penalty does not always indicate a low BTU content as many were due to moisture and ash penalties.

After the coal is received and tested it goes into either the active coal storage or the reserve coal storage. As the coal is used it is taken from either pile, but mostly from active storage, and put into the bunkers to feed any of the eight boilers for any of the seven generators. For this reason it is impossible to give the KWH generated from each coal supplier, and the B.T.U. supplied by each supplier for these KWH.

Hence the attached data gives the tons bought from each supplier, the cost of coal including bonuses and penalties and the gross generation for the year in KWH. It should be noted that the total tons of coal bought for the year did not exactly produce the total gross generation in KWH for that year because of additions or removals of coal from reserve storage.

We have no data as referred to in paragraph 5. Without surveys or memoranda as supporting evidence we can say that we



Department of Justice  
Page 3  
March 21, 1968

have always been a coal burning utility. In the earlier years all our coal came from Springfield mines or Sangamon County mines near Springfield, which was both good business and politically wise to patronize local coal firms. As the Springfield and Sangamon County mines were mined out, we of necessity have to go farther for our coal. As for oil we have always been too large for diesel generation. As for nuclear generation we were too small to consider it and considering the increasing size of nuclear units that are now being planned or installed, we will be too small for many years to come. As for gas as boiler fuel it was both more expensive than local coal and unavailable.

Very truly yours,

*C. P. Hafel*

C. P. Hafel  
Planning Engineer

cc: Lee E. Nickelson

CPH:jn

GENERAL OFFICES  
MUNICIPAL BUILDING  
SPRINGFIELD, ILLINOIS 62781



JOHN H. HUNTER  
COMMISSIONER OF PUBLIC PROPERTY  
Telephone 584-5731, Area Code 317

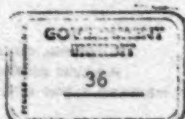
## COAL PURCHASES

Coal Supplier	1964		1965	
	Tons	Cost	Tons	Cost
Freeman Coal Mng. Co.	95,192.86	\$515,930.37	118,537.02	\$606,909.51

Coal Supplier	1966		1967	
	Tons	Cost	Tons	Cost
Freeman Coal Mng. Co.	133,396.47	\$692,864.87	135,676.91	\$715,831.36
Peabody Coal Co.	104,183.00	550,562.67	101,578.59	554,184.72
C. V. Beck & Co.	84,441.64	456,334.63	82,552.88	449,141.05
Royal Fuel Corp.	16,841.96	85,937.81	15,911.96	82,360.30
Total for year	338,863.07	\$1,785,699.98	335,720.34	\$1,791,517.43
Gross Generated KWH	581 679 200 KWH		568 871 200 KWH	

Note: C. V. Beck & Co. name changed October 1967 to St. Louis Industrial Coal Sales  
Eddy Coal Co. Cantrall, Illinois out of operation. Mined out.  
R & S Coal Co. Cantrall, Illinois out of operation. Mined out.

ILLINOIS POWER COMPANY



500 SOUTH 27TH STREET, DECATUR, ILLINOIS 62525

March 12, 1968

Mr. Donald F. Turner  
 Assistant Attorney General  
 Department of Justice  
 Room 2634, United States Courthouse  
 Chicago, Illinois 60604

Attention: Mr. John T. Cusack  
 Attorney, Midwest Office  
 Antitrust Division

Re: United States v. General Dynamics  
 Corporation et al., Civil No.  
67 C 1632 (N. D. Illinois)

Dear Mr. Turner:

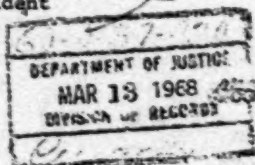
In response to your letter of February 26, 1968,  
 we are enclosing information as you have asked relating to  
 our fuel purchases.

At this writing we have not completed calculating  
 the information to give the BTU and Kilowatt Hour output de-  
 rived from each supplier, etc., as asked for in Paragraph (1)  
 one of your letter. We hope to send this to you within the  
 next couple of days.

Very truly yours,

*A. Kraakevik*  
 A. Kraakevik  
 Vice President

AK/g  
 Encl.



Decatur, Illinois  
March 12, 1968

Illinois Power Company  
Generation by Other than Coal Energy Sources

Coal -- with the exception of interruptible gas at one generating station -- has an economic advantage over other energy sources in our service area under present conditions.

Gas for electric generation is supplied to 6 of our boilers on an interruptible basis and, therefore, is on a seasonal basis. Interruptible gas available to 2 boilers which were equipped last year for gas firing is economical when compared to the coal available to these boilers. Gas supply information is listed below for the years 1964 through 1967.

Year	Cost	BTU's Consumed		Approx. KWH Output (*)	
		BTU's ( $10^{-6}$ )	% Total	KWH ( $10^{-3}$ )	% Total
1964	\$478,527	2,370,072	4.1	215,000	3.9
1965	212,339	1,051,635	1.5	94,000	1.4
1966	91,425	425,541	0.6	39,000	.6
1967	375,879	1,789,798	2.5	167,000	2.4

\*Gas when available and when economically advantageous is normally used coincidentally with coal. Therefore, the kilowatt hour output produced by gas must be approximated.

Fuel oil is used at three small peaking plants of which one was installed last year. The millions of BTU's consumed, the cost thereof and kilowatt hours produced therefrom during the years 1964 through 1967 were as follows:

Year	Cost	BTU's Consumed		Kwh Produced	
		BTU's ( $10^{-6}$ )	% Total	KWH ( $10^{-3}$ )	% Total
1964	\$ 533	707	.001	53	.001
1965	519	657	.001	57	.001
1966	1,844	2,278	.003	194	.003
1967	9,656	12,617	.018	657	.009

Fuel oil is also used in our major stations for boiler startup and for setting boiler safety valves following boiler internal inspections and repairs. Any generation resulting from this fuel oil usage is negligible and is incidental to the purpose of using the fuel oil. The millions of BTU's consumed and the cost thereof of oil used in our major station during the years 1964 through 1967 were as follows:

- 2 -

BTU's Consumed

<u>Year</u>	<u>Cost</u>	<u>BTU's (10<sup>-6</sup>)</u>	<u>% Total</u>
1964	\$ 76,259	119,959	.207
1965	52,863	77,903	.078
1966	52,262	75,863	.074
1967	37,285	52,727	.052

Fuel oil is seasonal to the extent that the greatest usage at the peaking plants is during the summer months and the greatest usage at the major stations is during other than summer months.

Nuclear - Illinois Power Company does not have facilities for generating electricity by utilizing nuclear energy.

Hydroelectric - Illinois Power Company has one small hydroelectric plant. The kilowatt hour output and the % of total from this plant for the years 1964 through 1967 were as follows:

<u>Year</u>	<u>Kwh Produced</u>	
	<u>Kwh (10<sup>-6</sup>)</u>	<u>% Total</u>
1964	18,593	.34
1965	16,638	.25
1966	16,599	.24
1967	16,475	.24



**ILLINOIS POWER COMPANY  
1966 COAL TONNAGE & COST**

	Havana	Hennepin	Vermillion	Wood River	Total Tons	Total Dollars
Beck	—	10,875	—	164,303	175,183	\$ 760,681.00
Deep Valley	—	—	356	—	356	386.00
Deep Vein	—	—	15,173	—	15,173	66,609.00
Dinmore—Two Rivers	—	—	2,652	—	2,652	10,373.00
Floyd Lee	—	—	8,373	—	8,373	31,817.00
Freeman	—	—	128,252	—	128,252	1,312,949.00
Great Lakes Carbon	—	—	—	158,019	158,019	354,555.00
Kiesel	—	—	—	70,209	70,209	94,755.00
O'Keefe Coal Co.	—	—	63,411	—	63,411	291,690.00
Old Ben	—	—	2,037	56	2,093	10,633.00
Peabody—Bright Star	—	77,775	—	—	77,775	396,874.00
Peabody—Chiefton	—	—	47,281	—	47,281	221,747.00
Peabody—Edwards	—	64,361	—	—	64,361	328,241.00
Peabody—Green Diamond (Conv)	—	—	—	—	—	—
Peabody—Key	—	—	—	2,575	2,575	11,664.00
Peabody—River King	—	149,903	—	—	149,903	764,505.00
Peabody—S. W. (Unit)	—	120,323	—	—	120,323	934,496.00
Peabody—S. W. (Conv.)	—	—	—	61,463	61,463	—
Peabody—Utility	—	—	—	1,042,803	1,042,803	4,338,060.00
	—	—	—	36,527	36,527	166,467.00
	—	—	—	72	72	288.00

	Havana	Hennepin	Vermillion	Wood River	Total Tons	Total Dollar
Peabody—Western Ky.	—	27,506	—	—	27,506	156,959.00
Republic—Elk #1	—	—	—	3,714	3,714	14,447.00
Republic—Harmattan (2X0)	—	—	41,248	—	41,248	210,364.00
Republic—Harmattan ( $\frac{1}{4} \times 1\frac{1}{4}$ )	—	—	142,299	—	142,299	614,731.00
Republic—T Bird	—	117,218	—	—	117,218	608,361.00
Republic—Shaunetown	—	25,732	—	—	25,732	138,952.00
Royal Fuel	—	—	—	2,352	2,352	8,796.00
Southern Ill. Co-op	—	—	356	9,147	9,503	37,329.00
Truax Tracer	342,390	14,596	—	—	356,986	1,753,239.00
United Electric—Banner	—	64,285	—	—	64,285	330,424.00
United Electric—Buckheart	—	98,790	—	—	98,790	507,780.00
V-Day	—	—	10,675	—	10,675	30,957.00
Total Tons Received	342,390	701,864	460,113	1,578,038	3,152,455	\$14,507,149.00

(\\$14,507,149.00)

(\\$6,686,720.61)

(\\$2,126,883.20)

(\\$4,012,430.62)

(\\$1,681,184.90)

ILLINOIS POWER COMPANY  
1967 COAL TONNAGE & COST

	Havana	Hennepin	Vermilion	Wood River	Total Tons	Total Dollar
Beck—Little Dog	—	7,157	—	61,672	68,829	\$ 802,064.90
Bell & Zoller	—	—	—	1,641	1,641	7,663.47
Dinsmore—Two Rivers	—	—	260	—	260	1,107.60
Floyd Lee—Western Brick	—	—	5,839	—	5,839	23,939.90
R. Lee—Deep Valley	—	—	55	—	55	136.95
Freeman	—	—	36,801	181,946	218,747	977,371.92
Kiesel	—	—	—	24,260	24,260	87,336.00
O'Keefe—DeSota	—	—	—	1,495	1,495	6,727.50
O'Keefe—Shelburn	—	—	92,359	—	92,359	455,329.87
O'Keefe—Jasonville	—	—	34,294	—	34,294	169,562.42
O'Neil	—	—	56	—	56	280.00
Peabody—Bright Star	—	64,626	—	—	64,626	332,177.64
Peabody—Chiefton	—	—	66,204	—	66,204	324,399.60
Peabody—Edwards	—	129,881	—	—	129,881	668,887.15
Peabody—Green Diamond	—	—	—	3,940	3,940	17,927.00
Peabody—River King	—	207,285	—	45,611	252,896	1,368,326.05
Peabody—River Queen	—	1,452	—	—	1,452	8,305.44
Peabody—S. W. (Unit)	—	—	—	1,166,063	1,166,063	4,874,143.34
Peabody—S. W. (Conv.)	—	—	—	200,327	200,327	911,487.86

	Havana	Hennepin	Vermilion	Wood River	Total Tons	Total Dollar
Republic—Elk #1	—	—	—	14	14	665.00
Republic—Murdock	—	—	23,678	—	23,678	127,624.42
Republic—Liberty #3 (2X0)	—	—	34,474	—	34,474	186,804.34
Republic—Harmattan ( $\frac{1}{4} \times 1\frac{1}{4}$ )	—	—	185,145	—	185,145	1,018,297.50
Republic—T Bird (Ayshire)	—	89,405	—	—	89,405	482,787.00
Republic—Crab Orchard	—	3,861	—	—	3,861	20,270.25
Royal Fuel	—	—	—	73	73	328.50
Truax Traer	365,018	—	—	—	365,018	1,865,241.98
Truax Traer	—	38,607	—	—	38,607	211,180.29
United Electric—Banner	—	62,100	—	68	62,168	380,057.00
United Electric—Buckheart	—	40,665	—	—	40,665	210,238.05
V-Day—Screenings	—	—	7,572	—	7,572	43,160.40
V-Day—Carbon	—	—	13,964	—	13,964	40,495.60
Total Tons Received	365,018	645,039	500,801	1,687,110	3,197,168	\$15,074,024.98

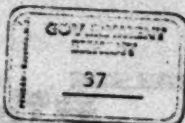
(\$15,074,024.98)

(\$7,166,544.47)

(\$2,914,381.44)

(\$3,460,034.68)

(\$1,865,241.98)



# DAIRYLAND POWER COOPERATIVE

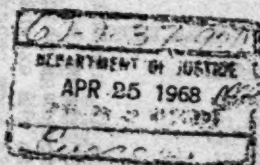
La Crosse, Wisconsin

54601

April 23, 1968

APR 29 1968

Mr. John T. Cusack  
Attorney, Midwest Office  
Antitrust Division  
Department of Justice  
Room 2634 United States Courthouse  
Chicago, Illinois 60604



Dear Mr. Cusack:

In answer to your letter of April 9 concerning the acquisition of United Electric Coal Companies by General Dynamics Corporation, we have assembled as much information as is immediately available.

In answer to question 1, the coal shipped by Freeman Coal Company and United Electric Coal Company was delivered to our plants at Alma and Cassville, Wisconsin. Tabulation "A" on the attached sheet shows the tonnage and the dollar amounts to each station for the years 1964-1967. All of the United Electric Coal Company's shipments came from their Fidelity Mine. The Freeman Coal Company has the option of shipping similar coals from various mines and we do not have the information as to the mine from which the coal was shipped. The dollar amount shown in Table "A" of course includes freight.

In answer to question 2, we only supply electric power and therefore do not have a BTU output. The estimated kilowatt hour output from each station by coal supplied by the two coal companies in question are shown on Table "B". Also, shown in Table "B" is the percentage of this power to our total generation.

In answer to question 3, we have two generating stations utilizing oil and gas for generation. One of these is a dual fuel diesel station - the other is a diesel station using oil only as fuel. Table "C" shows the fuel costs, KWH output, and the percentage that the output of these two plants is to the total output. The purchases of oil and gas are as seasonal as we can possibly make them because of the unrealistic high price of gas and oil.

There is a 50 megawatt second round demonstration nuclear power plant on our system that was scheduled for operation in 1965. The nuclear reactor of this power plant is owned by AEC. The turbine generator of this plant is owned by Dairyland Power Cooperative, and has been ready for operation since 1965; however, the nuclear reactor is still not in operation. As to whether our utilization of the atomic energy is seasonal, it will be used when and if it is operable.



Mr. Cusack - Page 2  
April 23, 1968

We have one hydroelectric plant which is our only other source of generating electric power. Table "D" shows the KWH generation of this hydroelectric plant and the percentage which this generation is to the total. This is seasonal to the extent that the river flow is seasonal. Although, there is some generation every day of the year.

At the present time, studies are just being initiated for determining our future energy sources.

We trust this information satisfactorily answers your questions.

Very truly yours,

DAIRYLAND POWER COOPERATIVE

  
John P. Madgett  
General Manager

NWM/sh  
Attachments  
cc: Reading File

TABLE "A"

	<u>FREEMAN</u>		<u>CASSVILLE</u>		<u>ALMA</u>		<u>UNITED ELECTRIC</u>	
	<u>TONS</u>	<u>COST</u>	<u>TONS</u>	<u>COST</u>	<u>TONS</u>	<u>COST</u>	<u>TONS</u>	<u>COST</u>
1964	43,860	217,000	9,675	47,329	25,825	136,756	2,638	13,798
1965	56,620	289,327	7,147	36,166	25,308	137,674	11,063	63,539
1966	59,272	320,693	18,000	96,922	32,096	179,662	12,755	69,770
1967	77,994	448,223	26,905	151,927	35,447	203,843	7,636	43,861

TABLE "B"

KWH x 1000 (using #coal/Gross KWH)

	<u>FREEMAN</u>		<u>UNITED ELECTRIC</u>	
	<u>ALMA</u>	<u>CASSVILLE</u>	<u>ALMA</u>	<u>CASSVILLE</u>
1964	97,467	18,786	57,389	5,122
1965	124,440	13,744	55,622	21,275
1966	131,716	35,294	71,324	25,010
1967	173,320	52,243	70,894	14,827

% OF TOTAL SYSTEM OUTPUT

	<u>FREEMAN</u>		<u>UNITED ELECTRIC</u>	
	<u>ALMA</u>	<u>CASSVILLE</u>	<u>ALMA</u>	<u>CASSVILLE</u>
1964	7.06	1.36	4.16	0.37
1965	8.01	0.88	3.58	1.37
1966	7.95	2.13	4.30	1.51
1967	10.21	3.08	4.18	0.87

TABLE "C"

	<u>TOTAL DIESEL PLANTS</u>		<u>% OF TOTAL</u>
	<u>FUEL COST</u>	<u>GROSS MWH</u>	
1964	14,626	2,653	0.19
1965	46,343	9,177	0.59
1966	64,512	12,619	0.76
1967	55,101	10,412	0.61

TABLE "D"GENOA AND FLAMBEAU

	<u>GROSS MWH</u>	<u>% OF TOTAL</u>
1964	49,066	3.56
1965	74,288	4.78
1966	81,118	4.89
1967	73,359	4.32

## GOVERNMENT EXHIBIT 39

## CORN PRODUCTS COMPANY

717 Fifth Avenue

New York, N. Y. 10022

## Executive Offices

May 24, 1968

Department of Justice

United States Courthouse Room 2634

Chicago, Illinois 60604

Attention: John T. Cusack, Esq.

Re: United States v. General Dynamics  
Corporation et al., Civil Action  
No. 67 C 1632 (N.D. Ill.)

Gentlemen:

I enclose herewith the material requested in your letter of April 15, concerning the above matter. I trust that it supplies you with all the information that you require.

Very sincerely yours,

/s/ Warren S. Adams, 2nd  
WARREN S. ADAMS, 2ND  
Vice President and  
General Counsel

WSA:ed

Encs.

## COMPANY LETTER

Moffett Technical Center

April 26, 1968

A. S. Wells  
New York

Replying to the Department of Justice's request of April 15, 1968, the following are the answers to the numbered questions:

(1) Coal is consumed in three boilers, two of which are chain-grate stoker fired, and the third uses pulverized fuel. Steam is used for the generation of power in turbo generators and for process heating requirements and product drying.

PEKIN COAL CONSUMED1964 - Total 180617 Tons (Strike reduced requirement)

United Electric	Cuba Mine	15380	Tons @ \$4.00
		15302	4.05
		20802	4.07
	Total	51484	
Peabody	Vulcan	55245	4.00
		6401	4.05
	Total	61646	
Republic	Flamingo	61114	4.00
		4909	4.05
	Total	66023	
Pittsburg Midway	Allendale	Total	1464 4.05

1965 - Total 230073 Tons

United Electric	Cuba	16803	4.07
		80166	4.10
	Total	96969	
Peabody	Vulcan	18272	4.07
	Bright Star	20215	4.10
	Total	38487	



Pittsburg Midway	Allendale	2089	4.07
		1965	4.10
	Total	4054	
Republic	Flamingo	14761	4.07
		18406	4.10
	Sunspot	57396	4.47
	Total	90563	

1966 - Total 230801

United Electric	Cuba	58772 Tons @ \$4.10
		172029 4.15
	Total	230801

1967 - Total 233292

United Electric	Cuba	Total 233292 4.15
-----------------	------	-------------------

(2) No other energy fuel is used at the Pekin Plant.

(3) See number (2)

(4) Attached are copies of Franzen's letters of February 12, 13, and 23, 1968 which substantiate the use of coal as the most economical fuel that we can use. Gas during the year of 1967 would have cost \$845,000 more than coal, less savings of \$273,000.

/s/ D. E. W.

DEWall:mm

cc: R. F. Brainard

Enclosures



UNION CARBIDE CORPORATION

270 PARK AVENUE

NEW YORK, N. Y. 10017

LAW DEPARTMENT

August 2 1968

Department of Justice  
Room 2634  
United States Courthouse  
Chicago, Illinois 60604

Attention: John T. Cusack, Esquire  
Midwest Office - Antitrust Division

Re United States v. General Dynamics  
Corporation, et al., Civil Action  
No. 67 C 1632 (N.D. Ill.)

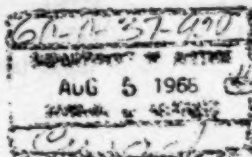
Gentlemen:

This letter is written in response to yours of July 29, 1968.

As stated in my letter of May 8, 1968, our East Chicago, Indiana, plant burns coal, coke and natural gas. The natural gas is purchased on an interruptible basis for economic reasons. On a firm or full-time basis the cost of the gas would approach the cost of purchased electrical energy and the primary use of the boilers in which these fuels are consumed is to generate electricity.

The only specification put on the coal presently being purchased for this plant is its B.t.u. content.

The plant, which was first put in service in 1951, was originally designed to burn coal. However, when economically priced gas became available in the Chicago area it was modified so that it can now burn either coal or gas. Coke is frequently available on a spot basis at attractive prices similar to the interruptible gas supply but the coke must be blended with coal or gas to burn efficiently so that it could not be used as a sole source of energy. Storage and handling costs of coal and coke are not significant and, of course, there are virtually no such costs related to gas.



Department of Justice

- 2 -

August 2 1968

Aside from the factors stated above and the fact that our contract with United Electric Coal Company calls for us to buy 50% of our fuel from them, cost is the sole factor in determining the fuel to use at any given point in time.

Very truly yours,

*John R. Murphy*

John R. Murphy

**DUNDEE****CEMENT COMPANY**

DUNDEE MICHIGAN TELEPHONE: DETROIT - WOODWARD 3-6488,  
 TOLEDO - CHERRY 4-7488, ANN ARBOR - NORMANBY 2-2847, DUNDEE - LAWRENCE 9-2411

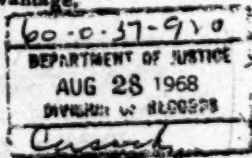
August 22, 1968

Mr. John T. Cusack  
 Attorney  
 Department of Justice  
 Room 2634 United States Courthouse  
 Chicago, Illinois 60604

Dear Mr. Cusack:

Responding to your letter of August 7, 1968, I shall try to answer the questions in the order in which they were asked.

1. Enclosed please find a schedule which provides the information regarding our coal purchases for the periods requested.
2. Neither the Dundee plant nor the Clarksville plant consumed any other energy fuel for the purposes for which coal is required. In both plants we use oil in connection with the start-up of kilns, because of the lower ignition point for oil. Once the coal is ignited, the fuel oil feed is stopped. The oil usage is not significant, and in no case has it been substituted as a running fuel, the purpose for which coal has been used by us.
3. Not applicable in light of the response to question 2.
4. I am advised that we do not specifically place a ceiling on the sulphur content of the coal we buy. However, we do seek to obtain the lowest sulphur content coal available at competitive prices. Economics play the most important role. If a high sulphur coal is offered at a substantially lower cost per million BTU than lower sulphur coal, we would use the high sulphur coal, provided the measures to compensate for the high sulphur content are not such as to erase the purchase cost advantage.



acknowledged 8-30-68

Mr. John T. Cusack

-2-

August 22, 1968

The present sulphur content of the coals purchased for the Dundee plant ranges from 0.80% to 1.25% with the average in the area of 1.10%.

The present sulphur content of the coals purchased for the Clarksville plant ranges from a low of 1.50% to a high of 3.0% with the average in the area of 2.6%.

We have not set an absolute maximum on sulphur content. I believe that this particular question has not been raised in a practical way in our experience, that is to say that extremely high sulphur coals have not been offered to us at a sufficiently low price to warrant our investigating the adjustments which we could or would be willing to make.

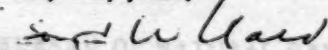
Obviously adjustment can be made and has been made within limits to the raw mix to compensate for changes in sulphur content of the coal.

5. General knowledge of the availability and economics of the various energy fuels known to be usable in the manufacture of cement clinker have made it unnecessary to make formalized surveys or studies as to the merits of one fuel versus another. Hence our information is fragmentary. At both Dundee and Clarksville only cursory investigations were made, and it was a relatively simple matter to decide to use coal at both locations for the main running fuel. The cost of fuel has been dramatically less for coal than for natural gas or fuel oil. However, from previous experience, our chief executive was reluctant to consider using a fuel whose supply could be interrupted.

Feasibility studies for the immediate conversion from coal to gas or oil have never been made at either location. It is possible to envision circumstances in which such would be considered, for example if another were to be in abundant supply for a reasonably assured long period.

We trust that this answers all of the questions which you raised.

Very truly yours,



Boyd W. Yard  
Secretary-Treasurer

BWY:jr

cc: M/O/Richard G. Ferguson

**DUNDEE**



**DUNDEE CEMENT COMPANY  
COAL PURCHASES 1967 SUMMARY  
CLARKSVILLE, MISSOURI, PLANT**

<u>Well &amp; Collier - Ill.</u>	<u>Tons</u>	<u>Cost</u>	<u>Freight</u>
January-March	14,021.95	\$ 55,386.73	\$20,331.84
April-June	5,103.05	20,918.14	7,400.14
July-December	21,690.00	92,484.72	31,553.60
Total	<u>40,815.00</u>	<u>\$168,789.59</u>	<u>\$59,285.58</u>
<u>Peabody - Ill.</u>			
January-March	4,349.80	\$ 17,181.72	\$ 6,307.22
April-June	11,789.55	48,107.19	17,094.84
July-December	55,272.30	234,605.38	80,339.67
Total	<u>71,411.65</u>	<u>\$299,894.29</u>	<u>\$103,741.73</u>
<u>Old Ben - Ill.</u>			
January-March	11,443.75	\$ 45,140.07	\$ 16,593.44
April-June	7,909.05	31,617.26	11,468.13
July-December	24,403.05	95,171.95	35,384.45
Total	<u>43,755.85</u>	<u>\$171,929.28</u>	<u>\$ 63,446.02</u>
<b>GRAND TOTAL</b>	<u>155,982.50</u>	<u>\$640,613.16</u>	<u>\$226,473.33</u>

## FEDERAL POWER COMMISSION

A

## STAFF REPORT

ON

## NATIONAL

## GAS SUPPLY AND DEMAND

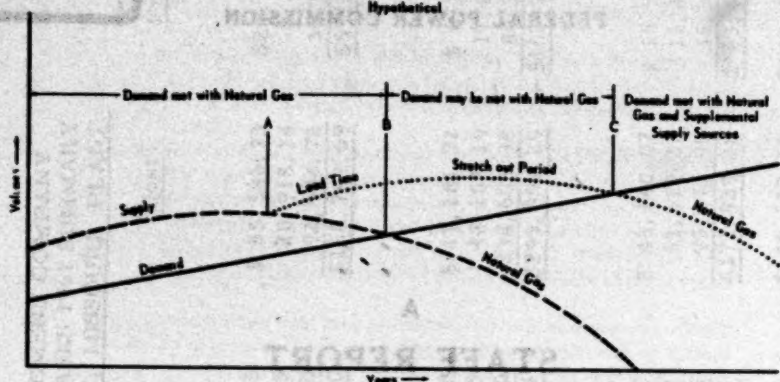
BUREAU OF NATURAL GAS

Washington, D.C.

September 1969

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Figure 1

GAS SUPPLY - DEMAND BALANCE  
HypotheticalINTRODUCTION

Evidence is mounting that the supply of natural gas is diminishing to critical levels in relation to demand. There is a compelling need for accurate and current analysis and interpretation of this trend. Prior studies of future natural gas availability have proven to be overly optimistic. The purpose of this report is to provide a realistic and objective outlook on the natural gas supply-demand relationship as a guide to effective regulatory and management decisions.

On the basis of current trends, only a few years remain before demand will outrun supply. During this period decisions of increasing urgency will confront industry and government policy makers with respect to gas prices, market expansions, exports and imports, and substitute fuel technology and availability. Timely action can extend the usefulness of the natural gas resource base and ease the inevitable transition to a gas economy in which imported and substitute gas fuels will play an increasingly important role. Figure 1, a hypothetical gas supply-demand balance case, is illustrative of the timing problem and the value of purposeful planning for future gas supply. The dashed supply line represents a continuation of present trends. The dotted supply line represents a program which would optimize the usefulness of our remaining natural gas resources and provide the needed additional time for economic and technological developments to furnish the required volumes of substitute fuels at reasonable costs.

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COAL SHIPMENTS TO ILLINOIS DESTINATIONS  
BY DISTRICT OF ORIGIN  
1965-1967

Year	Coal Shipments to Illinois Destinations	District of Origin					Illinois	Indiana
		3 and 6 Northern West Va. and West Va. Panhandle	4 Ohio	7 Southern West Va. and Northern Va.	8	9 West Kentucky		
1965	44,356,000 <sup>a/</sup>	154,000	15,000	1,033,000	3,386,000	4,206,000	34,147,000	1,415,000
1966	46,382,000	63,000	13,000	1,027,000	3,190,000	3,384,000	37,573,000	1,132,000
1967	46,710,000	167,000	12,000	822,000	2,961,000	3,150,000	38,510,000	1,068,000

<sup>a/</sup> Net Tons

Source: Mineral Industry Surveys, U. S. Department of the Interior, Bureau of Mines--  
Bituminous Coal and Lignite Distribution Report, Calendar Years 1965-1967  
(Callagher Deposition Exhibits 1-3).



Revised

1967 SALES OF COAL IN THE EASTERN INTERIOR COAL PROVINCE SALES AREA BY COAL PRODUCERS LOCATED IN ILLINOIS (PRODUCING DISTRICT NO. 10), INDIANA (PRODUCING DISTRICT NO. 11), AND WESTERN KENTUCKY (PRODUCING DISTRICT NO. 9)

Name of Producer	Within Sales Area		Outside Sales Area		Unknown		Total Tons
	Tons	% of Total	Tons	% of Total	Tons	% of Total	
<b>Ayrshire Collieries Corporation</b>							
Thunderbird Mine	985,542.00	100.0	--	--	--	--	985,542.00
"Right Mine	1,300,986.00	100.0	--	--	--	--	1,300,986.00
Lincoln Mine	1,084,244.00	93.6	73,375.00	6.3	1,171.00	.1	1,300,986.00
Minnehaha Mine	1,618,044.00	93.3	102,704.00	6.0	13,284.00	.7	1,733,972.00
Marquette Mine	546,213.00	96.5	--	--	19,803.00	3.5	566,016.00
Sun Spot Mine	774,069.00	96.5	8,007.00	1.0	19,832.00	2.5	801,908.00
Delta Mine	586,060.00	59.0	360,303.00	36.2	47,322.00	4.8	993,685.00
Gibraltar Mine (1/2)	1,036,479.00	100.0	--	--	--	--	1,036,479.00
<b>Total</b>	<b>1,931,937.00</b>	<b>92.5</b>	<b>944,395.00</b>	<b>6.3</b>	<b>101,352.00</b>	<b>1.2</b>	<b>8,577,678.00</b>
<b>Barbara Kay Coal, Inc.</b>							
Barbara Kay Mine	111,741.00	100.0	--	--	--	--	111,741.00
<b>Belle Valley Coal Company, Inc.</b>							
Belle Valley Mine	107,091.00	100.0	--	--	--	--	107,091.00
<b>Black Tan Mining Company</b>							
Black Tan Mine	--	--	1,210,244.85	100.0	--	--	1,210,244.85
<b>Freeman Coal Mining Corporation</b>							
Crown Mine	2,190,278.00	100.0	--	--	--	--	2,190,278.00
Orient #3 Mine	2,350,317.00	89.2	284,168.00	10.8	--	--	2,634,485.00
Orient #4 Mine	1,094,347.00	84.3	203,075.00	15.7	--	--	1,297,422.00
Orient #5 Mine	1,448,872.00	96.8	17,267.00	1.2	--	--	1,466,139.00
<b>Total</b>	<b>1,080,814.00</b>	<b>93.3</b>	<b>504,510.00</b>	<b>6.7</b>	<b>--</b>	<b>--</b>	<b>1,585,324.00</b>



Name of Producer	Within Sales Area		Outside Sales Area		Unknown		Total Tons
	Tons	% of Total	Tons	% of Total	Tons	% of Total	
Houston Coal Co. Houston Mine	14,615.41	100.0	—	—	—	—	14,615.41
Inland Creek Coal Company. West Kentucky Division							
East Diamond Mine	110,247.00	4.6	2,262,975.00	95.4	—	—	2,373,222.00
Pleasant View Mine	369,127.00	63.9	204,374.00	36.1	—	—	566,501.00
Atkinson Mine	1,441,719.00	94.1	28,428.00	1.9	—	—	1,470,147.00
Wies Mine	1,253,696.00	80.3	273,409.00	19.0	—	—	1,526,696.00
Williams Mine	680,672.00	76.2	201,383.00	19.2	9,991.00	.7	1,049,282.00
Uniontown Mine	224,186.00	89.8	14,732.00	5.9	27,087.00	2.6	249,764.00
Boone Mine	689,106.00	42.9	837,934.00	57.1	10,844.00	4.3	1,497,040.00
Total	1,741,955.00	52.5	1,242,260.00	47.0	47,822.00	.5	2,991,637.00
Kirpatrick Mining Company Kirpatrick Mine	698,674.56	94.2	43,000.50	5.8	—	—	741,675.06
Old Ben Coal Corporation							
Mine #24	2,136,747.00	99.6	8,786.00	.4	—	—	2,145,533.00
Mine #21	1,999,409.00	92.3	166,857.00	7.7	—	—	2,166,266.00
Mine #9	1,160,081.00	95.8	51,390.00	4.2	—	—	1,211,471.00
Rhoo Mine	1,311,190.00	86.6	203,675.00	13.4	—	—	1,514,865.00
Nischfoot #5 Mine	1,004,831.00	86.5	169,809.00	13.5	—	—	1,174,640.00
King's Station Mine	196,040.00	90.3	21,094.00	9.7	—	—	217,134.00
Total	8,110,306.00	92.9	621,711.00	7.1	—	—	8,732,017.00
The Pittsburgh & Midway Coal Mining Co.							
Colonial Mine	1,495,809.00	74.0	504,924.00	25.0	21,472.00	1.0	2,022,205.00
Paradise Mine	1,863,556.00	86.2	211,792.00	10.1	77,475.00	3.7	2,092,823.00
Dakoven Mine	2,082,702.00	70.92	833,786.00	29.07	326.00	.01	2,896,714.00
Total	5,362,069.00	76.3	1,519,422.00	22.3	99,273.00	1.4	6,980,764.00

Name of Producer	Within Sales Area		Outside Sales Area		Unknown		Total
	Total	% of Total	Total	% of Total	Total	% of Total	
<b>Peabody Coal Company</b>							
Northern Illinois Mine	754,530.46	100.0	--	--	39.69	--	754,570.15
River King Mine	5,277,234.91	99.8	24,261.85	.4	15,352.08	.3	5,316,848.84
Perrygo-Energy Mine	479,042.97	94.8	26,167.95	5.2	1,000	--	506,210.92
Midwest Mine	1,421,631.91	100.0	--	--	--	--	1,421,631.91
Mine #10	5,780,947.05	99.99	--	--	--	--	5,780,947.05
4,285,456.00	100.0		348.90	.01	--	--	4,285,804.90
Shindair Mine	2,105,597.83	99.4	3,256,739.45	60.6	280.38	--	5,362,617.66
River Queen Mine	876,710.45	31.1	1,931,990.95	60.4	14,554.55	--	2,823,255.95
East Mine	2,821,615.37	81.8	421,091.65	17.9	--	--	3,242,707.02
Wills Mine	516,718.76	87.1	334,807.61	12.4	150,187.51	5.8	8,710,420.49
Will Scarlet Mine	1,159,061.50	83.4	134,125.40	12.4	1,032.76	.1	1,294,219.66
Allendale Mine	247,974.34	100.0	287,263.28	16.5	1,707.12	.1	531,944.74
UNLITY Mine	503,559.45	97.3	13,786.55	2.6	334.06	.1	517,680.06
Edwards Mine	536,246.46	99.97	--	--	145.75	--	536,392.21
Leavelle Mine	2,486,661.94	84.1	535,914.50	15.8	3,071.28	.1	2,995,647.72
Regan Creek Coal Co.	1,436,158.00	100.0	--	--	--	--	1,436,158.00
Victoria Mine	895,971.59	100.0	--	--	--	--	895,971.59
Mecco Mine	1,495,903.31	99.44	1,604.90	.15	61.73	.01	1,497,569.94
Chickasha Mine	475,178.44	99.99	--	--	57.25	.01	475,235.69
Old Glory Mine	528,185.88	98.68	7,596.85	1.45	307.65	.07	536,090.38
Madala Grove Mine	1,381,602.16	99.98	147.20	.01	348.15	.01	1,381,997.51
Bright Star Mine	345,181.76	99.68	1,927.45	.35	168.43	.03	347,277.64
Green Diamond Mine	94.00	100.0	--	--	--	--	94.00
Eagle Mine	225,964.24	73.1	82,460.23	26.9	--	--	308,424.47
Barbers Mine	2,531,373.68	96.0	96,480.60	3.97	691.86	.03	2,628,546.14
Gibbalt Mine (1/2)	15,145.44	73.1	275,656.21	26.9	--	--	290,801.65
<b>Total</b>	<b>81,709,208.27</b>	<b>84.7</b>	<b>7,356,605.10</b>	<b>14.9</b>	<b>190,708.37</b>	<b>.4</b>	<b>89,256,521.74</b>
<b>Malto Coal Mining Company, Inc.</b>							
Jiffy Mine	223,030.43	49.2	--	--	299,839.80	50.8	422,870.23

Name of Producer	Within Sales Area		Outside Sales Area		Unknown		Total
	Tons	% of Total	Tons	% of Total	Tons	% of Total	
Sabara Coal Co., Inc. Mines 5, 6 and 16	2,171,491.00	85.3	375,102.00	14.7	--	--	2,546,593.00
Sherrard-Templeton Coal Company, Inc. Pioneer Mine	87,076.00	74.1	--	--	30,431.00	25.9	117,507.00
Western Illinois Coal Corporation -aptain Mine Greenline Mine Total	5,787,105.59 1,625,159.23 7,412,264.82	100.0 94.7 98.8	-- 3,915.40 3,915.40	-- .2 .1	-- 86,493.15 86,493.15	-- 5.1 2.1	5,787,105.59 1,716,177.60 7,503,283.19
Tah-Budgett, Joint Venture Lakeriver Mine	--	--	9,094.90	1.6	557,417.70	98.4	566,512.60
Truax-Trear Coal Company Burning Bear #2 Mine Picket Mine Little Sister Mine Burning Bear #3 Mine Hillsboro Mine Total	953,123.87 1,221,765.86 95,437.20 108,175.20 100.0 3,469,097.07	63.6 99.9 99.69 100.0 100.0 68.7	15,308.55 -- -- -- -- 15,308.55	1.0 -- -- -- -- .2	531,027.65 740.60 2,801.62 1,579,442.25 2,109,012.12	35.4 -- -- 93.34 31.1	1,499,540.07 1,822,506.40 917,936.82 1,683,217.45 4,169,027.02 6,182,236.16
The United Electric Coal Companies Banner Mine Fidelity Mine Cuba-Buckheart Mines Total	806,179.00 1,697,395.00 4,182,422.00 5,685,996.00	100.0 98.6 100.0 97.6	-- 131,700.00 131,700.00 --	-- 7.4 -- 2.4	-- -- -- --	-- -- -- --	806,179.00 1,759,095.00 2,172,422.00 5,317,586.00
Utah Coal Company Wright Mine	54,594.40	11.9	407,656.00	84.1	--	--	462,250.40

Name of Producer	Within Sales Area		Outside Sales Area		Unknown %		Total Tons
	Tons	% of Total	Tons	% of Total	Tons	% of Total	
Zeigler Coal & Coke Co.							
Spartan Mine	518,383.00	60.1	217,469.00	85.2	126,834.00	14.7	862,692.00
Zeigler #1 Mine	975,222.00	85.0	79,918.00	7.0	92,687.00	8.0	1,146,787.00
Zeigler #2 Mine	64,866.00	12.2	468,109.00	87.8	—	—	532,977.00
Orlode Mine	447,995.00	75.2	106,449.00	17.5	83,142.00	7.3	599,596.00
Murdoch Mine	704,928.00	97.0	—	—	21,964.00	3.0	726,892.00
Total	2,711,366.00	70.2	869,941.00	22.5	281,597.00	7.3	3,862,904.00
GRAND TOTAL	96,453,667.18	82.0	17,906,760.30	14.9	3,741,336.14	3.1	120,101,663.62

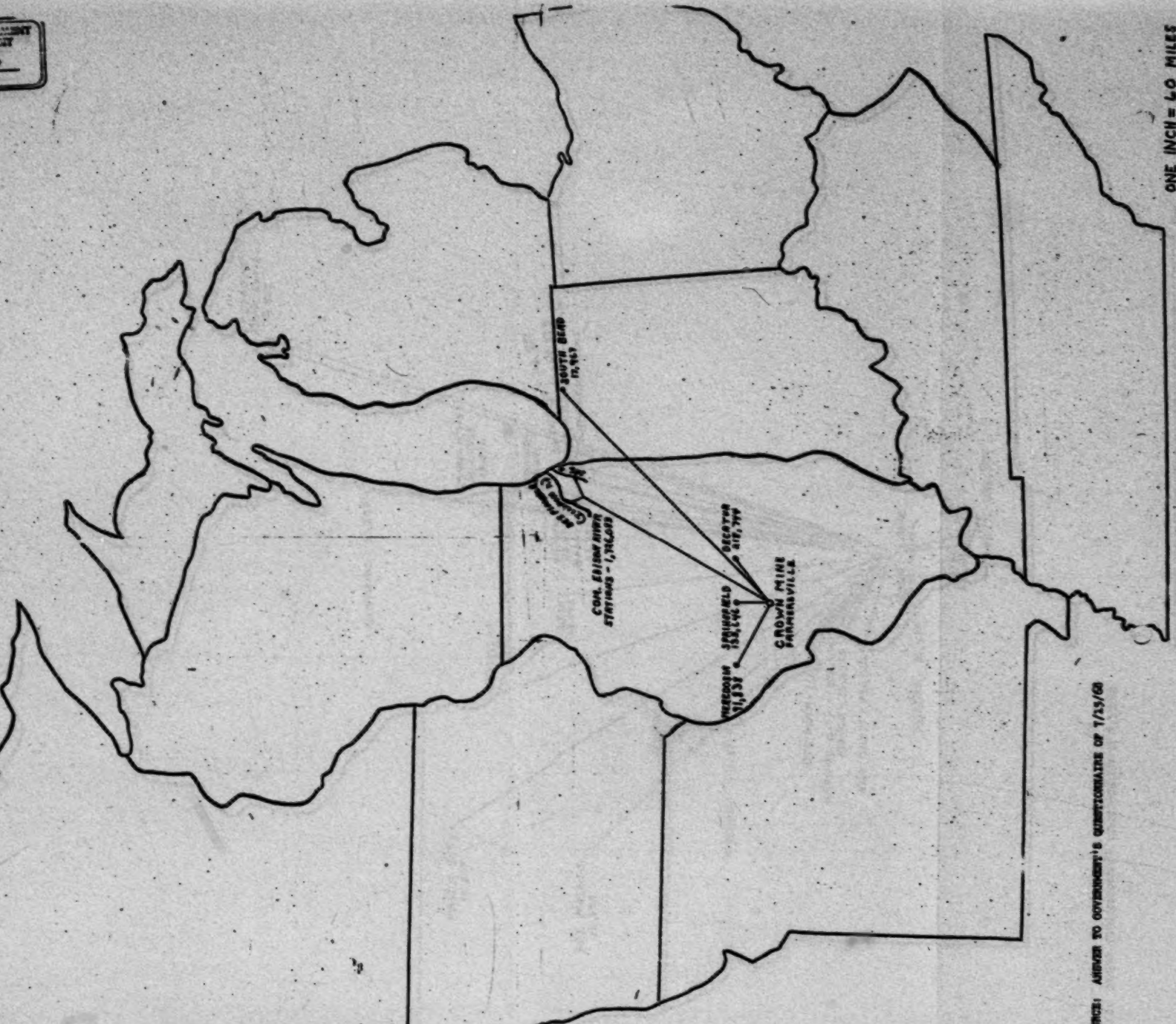
2/ The destination of some shipments is unknown for various reasons; the questionnaire showed the destination as unknown; a lumped figure was given on the questionnaire which included shipments to destinations both within and outside the sales area but no breakdown as to specific destination; the destination shown on the questionnaire could not be geographically located; etc.

Source: Answers to Government's questionnaire of July 15, 1966.





GOVERNMENT  
PROPERTY  
54

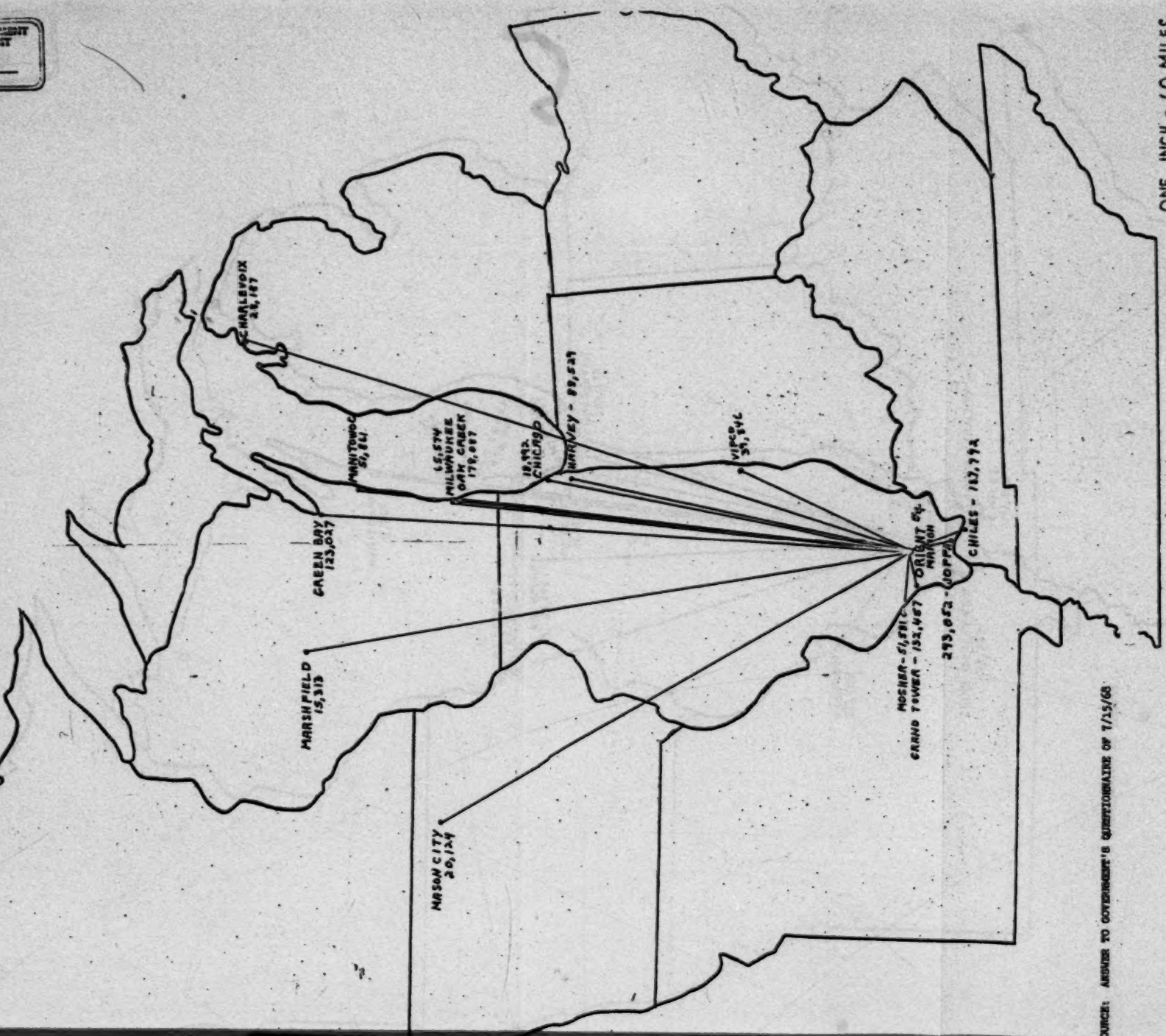


ONE INCH = 60 MILES





FREEMAN COAL MINING CORPORATION  
SHIPMENTS OF COAL, IN TONS, FROM THE ORIENT AS NINE TO CUSTOMER DESTINATIONS, 1967



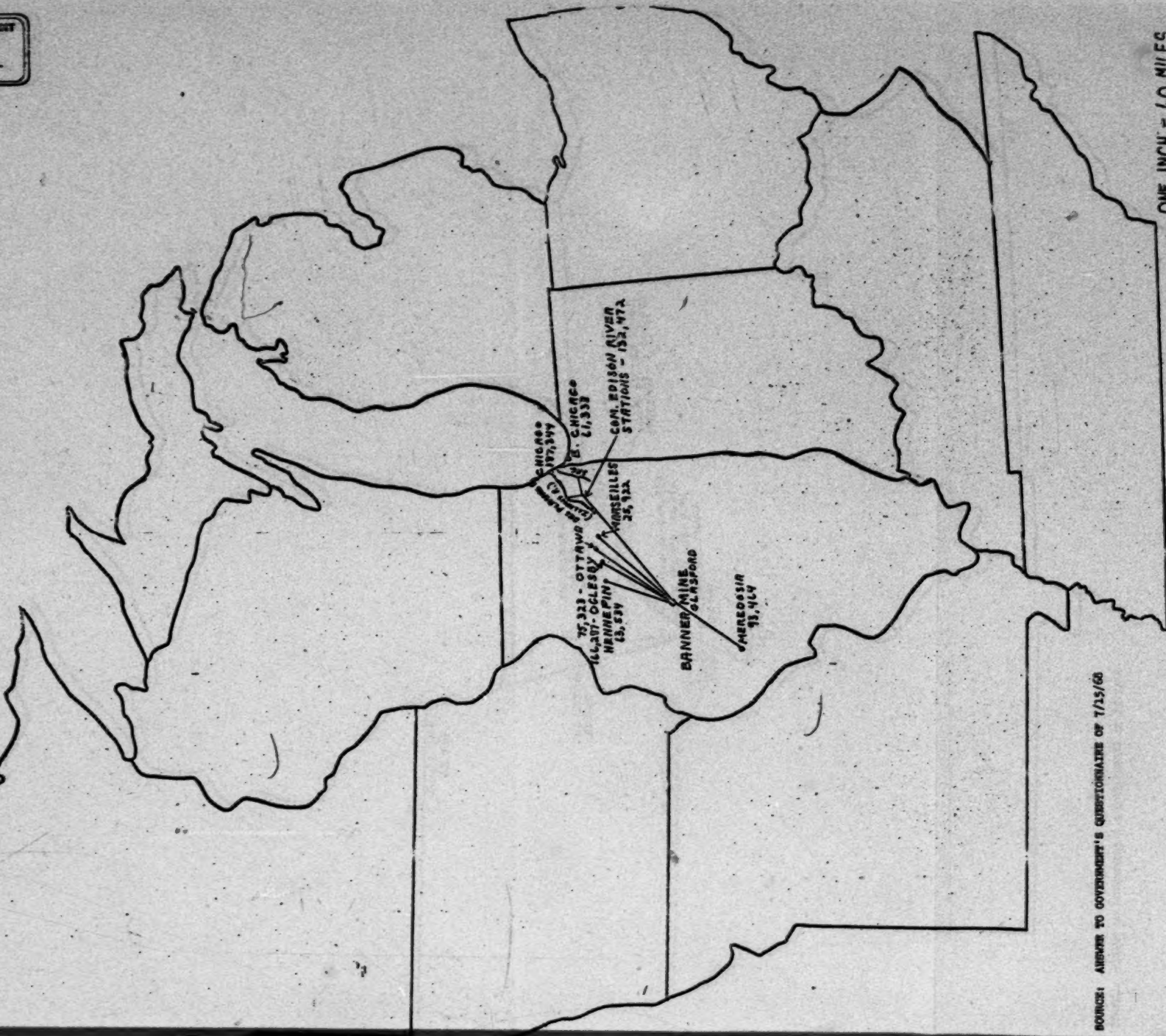
SOURCE: ANSWER TO GOVERNMENT'S QUESTIONNAIRE OF 7/15/68

ONE INCH = 100 MILES





THE UNITED ELECTRIC COAL COMPANIES  
SHIPMENTS OF COAL, IN TONS, FROM THE BAYVIEW MINE TO CUSTOMER DESTINATIONS, 1967



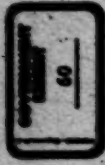
BOUNCIE: ANSWER TO GOVERNMENT'S QUESTIONNAIRE OF 7/15/60

ONE INCH = 1.0 MILE

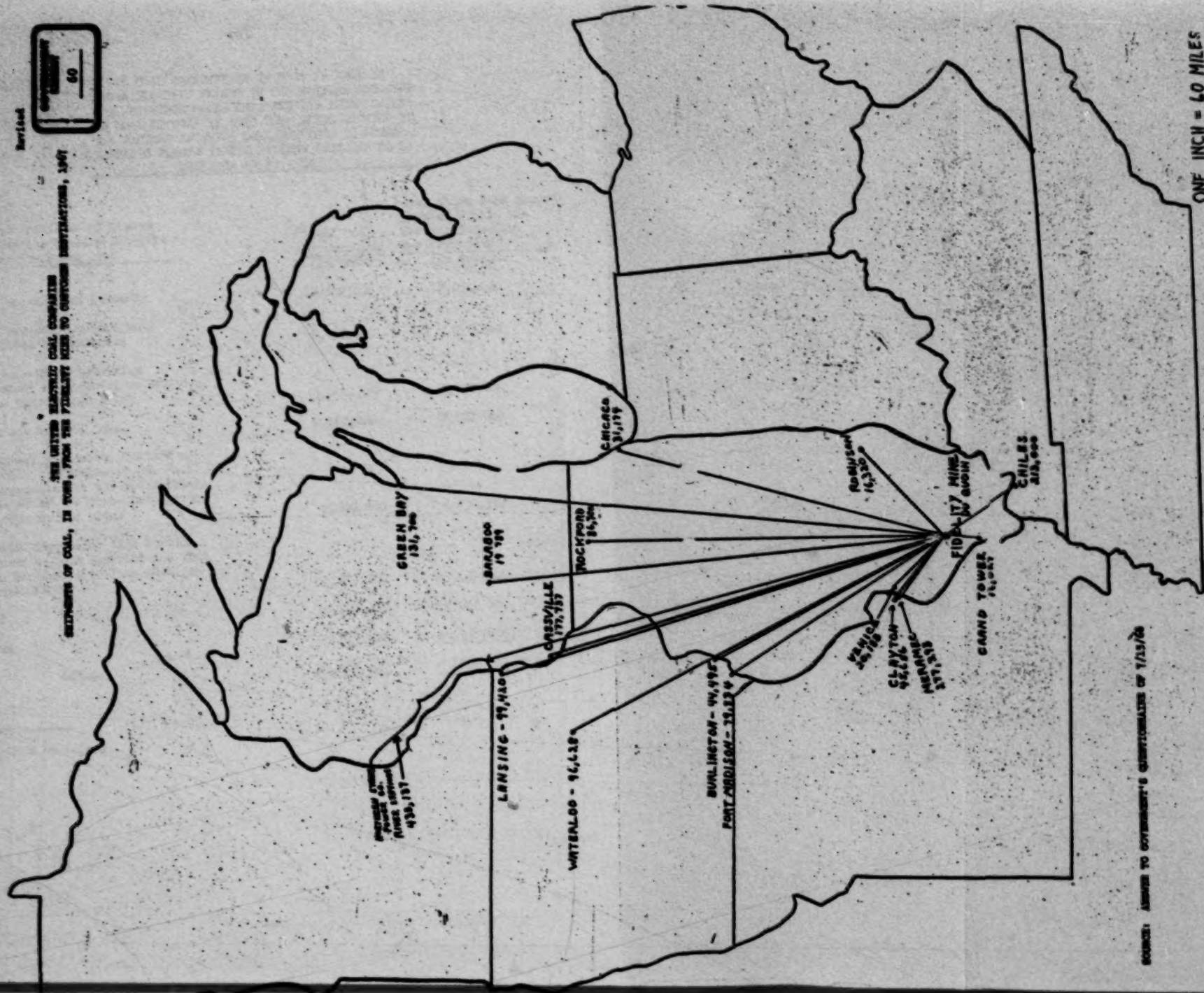




Revised

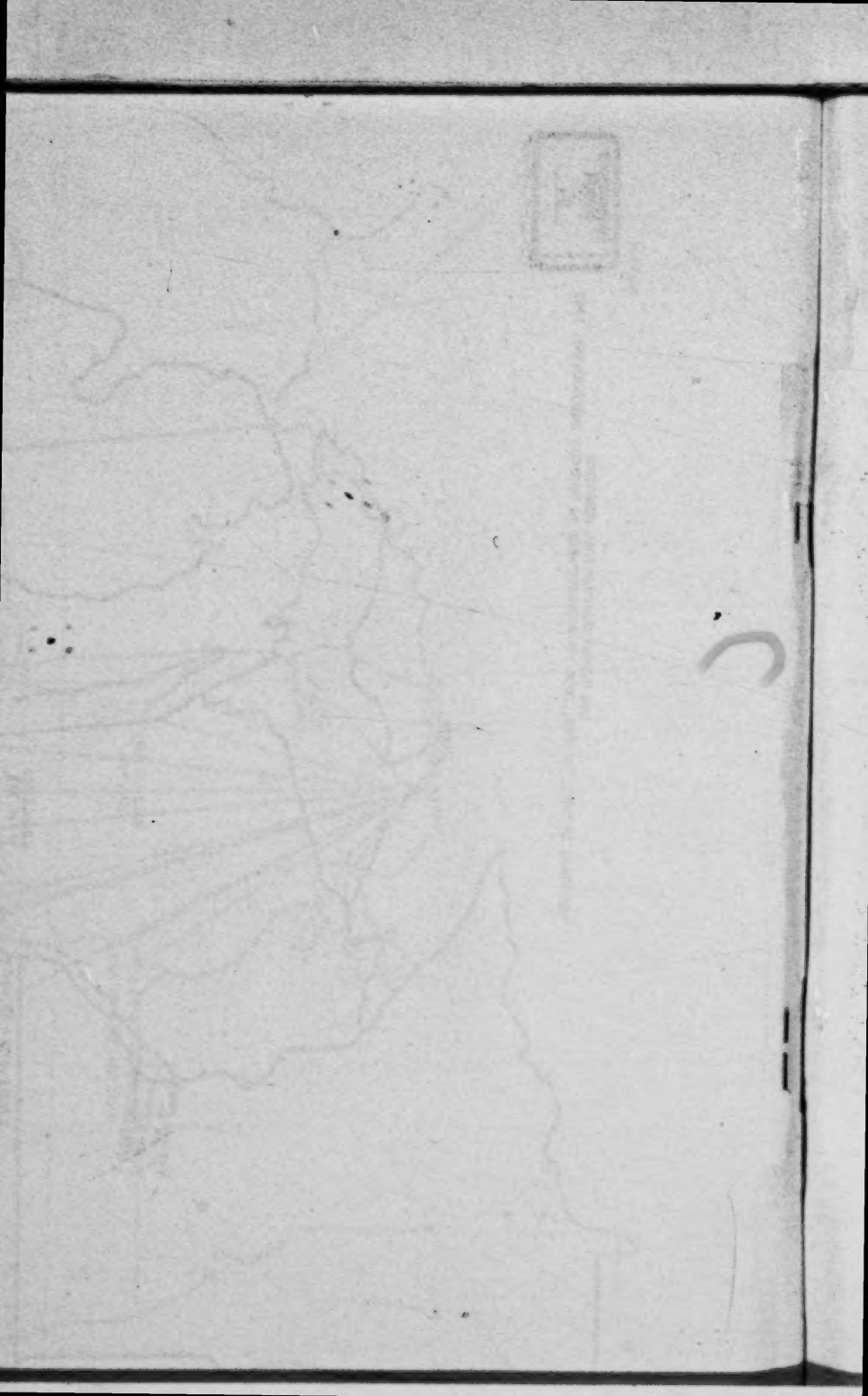


THE UNITED NATIONS COAL COMMISSION  
 STATEMENTS OF COAL, IN TONS, FROM THE FIDELITY ACES TO CUSTOMS INSPECTIONS, 1961



SOURCE: ANSWER TO GOVERNMENT'S QUESTIONNAIRE OF 1/15/62

ONE INCH = 60 MILES



GX 61

TOTAL COAL CONSUMPTION IN TONS IN 1967 BY  
STEAM ELECTRIC PLANTS IN THE EASTERN INTERIOR  
COAL PROVINCE SALES AREA AND THE TOTAL SALES  
OF COAL IN TONS IN 1967 FROM MINES LOCATED IN  
THE EASTERN INTERIOR COAL PROVINCE TO STEAM  
ELECTRIC PLANTS IN THE EASTERN INTERIOR COAL  
PROVINCE SALES AREA

	1	2
<u>States and Portions of States Comprising the Eastern Interior Coal Province Sales Area</u>	<u>Total Coal Consumption (In Tons)</u>	<u>Coal Sales From Mines Located Within the Eastern Interior Coal Province (In Tons)</u>
Western one half of Kentucky	10,649,000	12,051,000
Western one-third to one half of the State of Tennessee	6,050,000	5,210,000
The Extreme Eastern Portion of the State of Missouri on or Near the Mississippi River	3,042,000	3,491,000
Eastern one half of Iowa	2,167,200	2,042,000
Southeastern Minnesota, defined as Principally the Cities of St. Paul and Minneapolis and the Southeastern one-quarter of the State Contiguous to the Mississippi River	2,258,000	2,092,242
Wisconsin, Except for that Portion Contiguous to Lake Superior and that Portion Contiguous to Lake Michigan above Milwaukee	5,689,000	5,699,000
Indiana	19,120,000	18,697,000
Illinois	<u>28,295,000</u>	<u>28,324,000</u>
TOTAL	<u>77,310,200</u>	<u>77,606,242</u>

See Sources on page 2.



GOVERNMENT  
EXHIBIT

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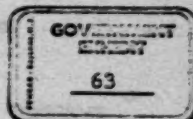
PRODUCTION OF COAL IN ILLINOIS BY THE LEADING COMPANIES  
AND THEIR SUBSIDIARIES 1/ FOR THE 1957 CALENDAR YEAR

Name of Company	Production of Coal in Tons	Rank	Percentage of Total Production
Peabody Coal Company	10,736,481	1	23.0
Material Service Corporation	6,905,475	2	14.8
Freeman Coal Mining Corporation	5,832,717		(12.5)
Chicago, Wilmington & Franklin Coal Co. 2/	1,072,758		( 2.3)
Truax-Traer Coal Company	4,170,363	3	8.9
The United Electric Coal Companies	3,619,243	4	7.7
Mid Ben Coal Corporation	3,519,263	5	7.5
Zeigler Coal & Coke Co.	2,747,035	6	5.9
Wyrshire Collieries Corporation	2,410,301	7	5.2
Midland Electric Coal Corporation	2,367,206	8	5.0
Bahara Coal Co., Inc.	1,589,354	9	3.4
Union Colliery Co.	1,156,065	10	2.5
Stonefort Corporation	1,144,394	11	2.5
Southwestern Illinois Coal Corporation	812,911	12	1.7
Mid-Continent Coal Corporation	727,399	13	1.6
Luzaghi Coal Company	572,559	14	1.2
Saxton Coal Corporation	547,280	15	1.2
Morgan Coal Company	407,297	16	.9
Little Dog Coal Company	360,708	17	.8
27 remaining companies	2,889,555		6.2
TOTAL 1957 Production of Coal in Illinois	46,682,889		100.0

1/ Production in excess of 300,000 tons.

2/ See Deposition Transcript of Frank M. Nugent, p. 62.





PRODUCTION OF COAL IN ILLINOIS BY THE LEADING COMPANIES  
AND THEIR SUBSIDIARIES 1/ FOR THE 1958 CALENDAR YEAR

<u>Name of Company</u>	<u>Production of Coal in Tons</u>	<u>Rank</u>	<u>Percentage of Total Production</u>
Peabody Coal Company	8,714,059	1	19.9
Material Service Corporation	6,872,541	2	15.6
Freeman Coal Mining Corporation	5,801,164		(13.2)
Chicago, Wilmington & Franklin Coal Co. <u>2/</u>	1,071,377		( 2.4)
Truax-Truer Coal Company	4,346,474	3	9.9
Old Ben Coal Corporation	3,580,078	4	8.2
— .as United Electric Coal Companies	3,334,478	5	7.6
Zeigler Coal & Coke Co.	3,076,732	6	7.0
Ayrshire Collieries Corporation	2,343,786	7	5.4
Midland Electric Coal Corporation	2,340,470	8	5.3
Sahara Coal Co., Inc.	1,565,160	9	3.6
Stonefort Corporation	1,088,982	10	2.5
Southwestern Illinois Coal Corporation	956,347	11	2.2
Mid-Continent Coal Corporation	823,966	12	1.9
Saxton Coal Corporation	637,241	13	1.5
Union Colliery Co.	577,331	14	1.3
Morgan Coal Company	573,231	15	1.3
Lumaghi Coal Company	521,364	16	1.2
Little Dog Coal Company	375,594	17	.9
116 remaining companies	<u>2,049,296</u>		4.7
TOTAL 1958 Production of Coal in Illinois	43,777,130		100.0

1/ Production in excess of 300,000 tons.

2/ See Deposition Transcript of Frank M. Nugent, p. 62.

PRODUCTION OF COAL IN ILLINOIS BY THE LEADING COMPANIES  
AND THEIR SUBSIDIARIES 1/ FOR THE 1959 CALENDAR YEAR

<u>Name of Company</u>	<u>Production of Coal in Tons</u>	<u>Rank</u>	<u>Percentage of Total Production</u>
Peabody Coal Company	9,588,461	1	21.1
Material Service Corporation	<u>6,858,695</u>	2	15.1
Freeman Coal Mining Corporation	6,006,089		(13.2)
Chicago, Wilmington & Franklin Coal Co. <u>2/</u>	348,550		(.8)
Orient No. 2 Coal Company <u>2/</u>	504,056		(1.1)
Truax-Traer Coal Company	4,764,481	3	10.5
Old Ben Coal Corporation	3,757,366	4	8.3
The United Electric Coal Companies	3,661,202	5	8.1
Zeigler Coal & Coke Co.	3,275,091	6	7.2
Midland Electric Coal Corporation	2,482,668	7	5.5
Ayrshire Collieries Corporation	2,393,451	8	5.3
Sahara Coal Co., Inc.	1,637,451	9	3.6
Southwestern Illinois Coal Corporation	1,138,132	10	2.5
Stonefort Corporation	941,807	11	2.1
Mid-Continent Coal Corporation	917,139	12	2.0
Morgan Coal Company	669,672	13	1.5
Saxton Coal Corporation	564,289	14	1.2
Lumaghi Coal Company	505,458	15	1.1
Little Dog Coal Company	327,830	16	.7
106 remaining companies	<u>1,891,433</u>		4.2
TOTAL 1959 Production of Coal in Illinois	45,374,626		100.0

1/ Production in excess of 300,000 tons.

2/ See Deposition Transcript of Frank M. Nugent, p. 62.

Source: Coal Report of Illinois, 1959, Department of Mines and Minerals,  
State of Illinois, Table 10, pages 34-54.

PRODUCTION OF COAL IN ILLINOIS BY THE LEADING COMPANIES  
AND THEIR SUBSIDIARIES <sup>1/</sup> FOR THE 1960 CALENDAR YEAR

<u>Name of Company</u>	<u>Production of Coal in Tons</u>	<u>Rank</u>	<u>Percentage of Total Production</u>
Peabody Coal Company	9,418,967	1	20.5
General Dynamics Corporation	6,833,842	2	14.9
Freeman Coal Mining Corporation	6,234,128		(13.6)
Orient No. 2 Coal Company	599,714		( 1.3)
Truax-Traer Coal Company	4,927,195	3	10.8
The United Electric Coal Companies	4,231,072	4	9.2
Old Ben Coal Corporation	3,512,214	5	7.7
Zeigler Coal & Coke Co.	3,429,094	6	7.5
Midland Electric Coal Corporation	2,557,304	7	5.6
Ayrshire Collieries Corporation	2,165,026	8	4.7
Sahara Coal Co., Inc.	1,722,557	9	3.8
Mid-Continent Coal Corporation	936,468	10	2.0
Southwestern Illinois Coal Corporation	933,759	11	2.0
Stonefort Coal Mining Co., Inc.	882,755	12	1.9
Saxton Coal Corporation	711,733	13	1.6
Morgan Coal Company	668,019	14	1.5
Lunaghi Coal Company	563,963	15	1.2
Little Dog Coal Company	358,171	16	.8
82 remaining companies	<u>1,968,493</u>		4.3
TOTAL 1960 Production of Coal in Illinois	45,820,632		100.0

<sup>1/</sup> Production in excess of 300,000 tons.

Source: Coal Report of Illinois, 1960, Department of Mines and Minerals,  
State of Illinois, Table 10, pages 34-55.

**PRODUCTION OF COAL IN ILLINOIS BY THE LEADING COMPANIES  
AND THEIR SUBSIDIARIES <sup>a/</sup> FOR THE 1961 CALENDAR YEAR**

<u>Name of Company</u>	<u>Production of Coal in Tons</u>	<u>Rank</u>	<u>Percentage of Total Production</u>
Peabody Coal Company	9,732,236	1	21.6
Freeman Coal Mining Corporation, subsidiary of General Dynamics Corporation	6,610,361	2	14.6
Truax-Traser Coal Company	4,454,663	3	9.9
The United Electric Coal Companies	4,420,690	4	9.8
Old Ben Coal Corporation	3,453,795	5	7.7
Zeigler Coal & Coke Co.	3,390,770	6	7.5
Midland Electric Coal Corporation	2,367,667	7	5.2
Ayrshire Collieries Corporation	2,270,004	8	5.0
Sahara Coal Co., Inc.	1,769,638	9	3.9
Southwestern Illinois Coal Corporation	939,455	10	2.1
Stonefort Coal Mining Co., Inc.	909,769	11	2.0
Mid-Continent Coal Corporation	822,111	12	1.8
Saxton Coal Corporation	700,002	13	1.6
Morgan Coal Company	556,207	14	1.2
Lunaghi Coal Company	536,071	15	1.2
Little Dog Coal Company	312,192	16	.7
77 remaining companies	<u>1,886,895</u>		4.2
<b>TOTAL 1961 Production of Coal in Illinois</b>	<b>45,132,526</b>		<b>100.0</b>

<sup>a/</sup> Production in excess of 300,000 tons.

Source: Coal Report of Illinois, 1961, Department of Mines and Minerals,  
State of Illinois, Table 10, pages 34-53.

**PRODUCTION OF COAL IN ILLINOIS BY THE LEADING COMPANIES  
AND THEIR SUBSIDIARIES <sup>2/</sup> FOR THE 1962 CALENDAR YEAR**

<u>Name of Company</u>	<u>Production of Coal in Tons</u>	<u>Rank</u>	<u>Percentage of Total Production</u>
Peabody Coal Company	10,495,479	1	21.7
Freeman Coal Mining Corporation, subsidiary of General Dynamics Corporation	6,841,632	2	14.1
Consolidation Coal Co., Truax-Traer Division	5,021,377	3	10.4
The United Electric Coal Companies	4,846,926	4	10.0
Old Ben Coal Corporation	3,804,213	5	7.9
Zeigler Coal & Coke Co.	3,435,225	6	7.1
Midland Electric Coal Corporation	3,379,443	7	7.0
Ayrshire Collieries Corporation	2,432,241	8	5.0
Sahara Coal Co., Inc.	1,929,781	9	4.0
Stonefort Coal Mining Co., Inc.	1,160,576	10	2.4
Southwestern Illinois Coal Corporation	1,062,503	11	2.2
Saxton Coal Corporation	656,757	12	1.4
Morgan Coal Company	505,698	13	1.0
Lumaghi Coal Company	486,582	14	1.0
Little Dog Coal Company	318,096	15	.7
63 remaining companies	<u>1,977,384</u>		4.1
TOTAL 1962 Production of Coal in Illinois	48,353,913		100.0

<sup>2/</sup> Production in excess of 300,000 tons.

Source: Coal Report of Illinois, 1962, Department of Mines and Minerals,  
State of Illinois, Table 10, pages 30-47.



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PRODUCTION OF COAL IN ILLINOIS BY THE LEADING COMPANIES  
AND THEIR SUBSIDIARIES \*/ FOR THE 1963 CALENDAR YEAR

<u>Name of Company</u>	<u>Production of Coal in Tons</u>	<u>Rank</u>	<u>Percentage of Total Production</u>
Peabody Coal Company	15,110,212	1	29.3
Freeman Coal Mining Corporation, subsidiary of General Dynamics Corporation	6,928,804	2	13.4
Consolidation Coal Co., Truax-Traer Division	5,296,352	3	10.2
The United Electric Coal Companies	4,944,935	4	9.6
Old Ben Coal Corporation	4,110,778	5	8.0
Zeigler Coal & Coke Co.	3,339,199	6	6.5
Ayrshire Collieries Corporation	2,957,497	7	5.7
Sahara Coal Co., Inc.	2,137,753	8	4.1
Stonfort Coal Mining Co., Inc.	1,322,879	9	2.6
Southwestern Illinois Coal Corporation	985,730	10	1.9
Young's Coal Corporation	640,660	11	1.2
Lumaghi Coal Company	528,864	12	1.0
Morgan Coal Company	352,968	13	.7
Crab Orchard Cooperative Coal Co.	308,642	14	.6
J. W. Coal Company, Inc.	300,132	15	.6
63 remaining companies	<u>2,377,026</u>		4.6
TOTAL 1963 Production of Coal in Illinois	51,642,431		100.0

\*/ Production in excess of 300,000 tons.

Source: Coal Report of Illinois, 1963, Department of Mines and Minerals,  
State of Illinois, Table 10, pages 30-47.

PRODUCTION OF COAL IN ILLINOIS BY THE LEADING COMPANIES  
AND THEIR SUBSIDIARIES <sup>2/</sup> FOR THE 1964 CALENDAR YEAR

<u>Name of Company</u>	<u>Production of Coal in Tons</u>	<u>Rank</u>	<u>Percentage of Total Production</u>
Peabody Coal Company	16,530,643	1	30.1
Freeman Coal Mining Corporation, subsidiary of General Dynamics Corporation	7,017,031	2	12.8
The United Electric Coal Companies	5,793,936	3	10.6
Consolidation Coal Co., Truax-Traer Division	5,736,485	4	10.4
Old Ben Coal Corporation	4,540,879	5	8.3
Zeigler Coal & Coke Co.	3,438,660	6	6.3
Ayrshire Collieries Corporation	2,888,888	7	5.3
Sahara Coal Co., Inc.	2,282,351	8	4.2
Southwestern Illinois Coal Corporation	1,824,449	9	3.3
Stonefort Coal Mining Co., Inc.	1,242,306	10	2.3
Young's Coal Corporation	609,656	11	1.1
Little Dog Coal Company	373,937	12	.7
J. W. Coal Company, Inc.	338,732	13	.6
58 remaining companies	<u>2,216,535</u>		4.0
TOTAL 1964 Production of Coal in Illinois	54,834,488		100.0

<sup>2/</sup> Production in excess of 300,000 tons.

Source: Coal Report of Illinois, 1964, Department of Mines and Minerals,  
State of Illinois, Table 10, pages 30-47.

PRODUCTION OF COAL IN ILLINOIS BY THE LEADING COMPANIES  
AND THEIR SUBSIDIARIES <sup>a/</sup> FOR THE 1965 CALENDAR YEAR

<u>Name of Company</u>	<u>Production of Coal in Tons</u>	<u>Rank</u>	<u>Percentage of Total Production</u>
Peabody Coal Company	17,111,524	1	29.4
Freeman Coal Mining Corporation, subsidiary of General Dynamics Corporation	7,257,856	2	12.5
Consolidation Coal Co., Truax-Traer Division	5,471,467	3	9.4
The United Electric Coal Companies	5,348,641	4	9.2
Southwestern Illinois Coal Corporation	5,130,198	5	8.8
Old Ben Coal Corporation	4,720,256	6	8.1
Zeigler Coal & Coke Co.	3,500,132	7	6.0
Ayrshire Collieries Corporation	2,693,198	8	4.6
Sahara Coal Co., Inc.	2,379,692	9	4.1
Stonefort Coal Mining Co., Inc.	1,386,169	10	2.4
Little Dog Coal Company	378,980	11	.6
J. W. Coal Company, Inc.	378,419	12	.6
New Gallatin Coal Co.	328,765	13	.6
Youngs' Coal Corporation	327,840	14	.6
Big Muddy Coal Company	319,105	15	.5
14 remaining companies	<u>1,500,238</u>		2.6
TOTAL 1965 Production of Coal in Illinois	58,232,480		100.0

<sup>a/</sup> Production in excess of 300,000 tons.

Source: Coal Report of Illinois, 1965, Department of Mines and Minerals,  
State of Illinois, Table 10, pages 30-45.

PRODUCTION OF COAL IN ILLINOIS BY THE LEADING COMPANIES  
AND THEIR SUBSIDIARIES \*/ FOR THE 1966 CALENDAR YEAR

<u>Name of Company</u>	<u>Production of Coal in Tons</u>	<u>Rank</u>	<u>Percentage of Total Production</u>
Peabody Coal Company	19,337,269	1	30.6
Freeman Coal Mining Corporation, subsidiary of General Dynamics Corporation	7,706,710	2	12.2
Consolidation Coal Co. (a subsid- iary of Continental Oil Co.), Truax-Traer Division	6,863,214	3	10.8
Southwestern Illinois Coal Corporation	6,786,797	4	10.7
Old Ben Coal Corporation	6,056,409	5	9.6
The United Electric Coal Companies	5,854,938	6	9.3
Zeigler Coal & Coke Co.	3,286,410	7	5.2
Sahara Coal Co., Inc.	2,528,877	8	4.0
Ayrshire Collieries Corporation	2,326,835	9	3.7
Little Dog Coal Company	447,676	10	.7
37 remaining companies	2,017,562		3.2
TOTAL 1966 Production of Coal in Illinois	63,212,697		100.0

\*/ Production in excess of 300,000 tons.

Source: Coal Report of Illinois, 1966, Department of Mines and Minerals,  
State of Illinois, Table 10, pages 30-43.

PRODUCTION OF COAL IN ILLINOIS BY THE LEADING COMPANIES  
AND THEIR SUBSIDIARIES 1/ FOR THE 1967 CALENDAR YEAR

<u>Name of Company</u>	<u>Production of Coal in Tons</u>	<u>Rank</u>	<u>Percentage of Total Production</u>
Peabody Coal Company	20,158,284 2/	1	31.1
General Dynamics Corporation	<u>14,123,787</u>	2	21.8
Freeman Coal Mining Corporation	6,360,496		(12.9)
The United Electric Coal Companies	5,743,291		( 8.9)
Southwestern Illinois Coal Corporation	7,526,586	3	11.6
Consolidation Coal Co. (a subsidiary of Continental Oil Co.), Truax-Traer Division	6,906,346	4	10.6
Old Ben Coal Corporation	5,989,539	5	9.3
Zeigler Coal & Coke Co.	2,898,399	6	4.5
Sahara Coal Co., Inc.	2,550,507	7	3.9
Ayrshire Collieries Corporation	2,367,983	8	3.7
Main Line Coal Corporation	587,784	9	.9
Little Dog Coal Company	416,049	10	.6
29 remaining companies	<u>1,289,507</u>		2.0
TOTAL 1967 Production of Coal in Illinois	64,814,771		100.0

1/ Production in excess of 300,000 tons.

2/ Pursuant to Final Judgment dated October 23, 1967 in United States v. Peabody Coal Company et al., Civil Action No. 67-C-1621 (N.D. Illinois), 1967 Trade Cases Sec. 72,213, Peabody is to divest itself on or before October 23, 1969 of mines having annual production of 6,000,000 tons of coal. In compliance with this judgment, Peabody is in the process of selling its Mecco, Allendale, and Elm (a combination of the Bright Star, Middle Grove, and Elmwood [not in production in 1967] mines) Mines, all of which are located in Illinois. In 1967 these mines produced a total of 2,495,297 tons of coal.

Source: Coal Report of Illinois, 1967, Department of Mines and Minerals, State of Illinois, Table 10, pages 30-43.



PRODUCTION OF COAL IN ILLINOIS, 1957-1967

Year	Total Production	Number of Companies	Production of Top 2 Tons % of Total	Production of Top 4 Tons % of Total	Production of Top 10 Tons % of Total
1957	46,682,889	144	17,641,956 37.8	25,431,562 54.5	39,220,786 84.0
1958	43,777,130	133	15,586,600 35.6	23,513,152 53.7	37,262,760 85.1
1959	45,374,626	122	16,447,156 36.2	24,969,003 55.0	39,556,998 87.2
1960	45,820,632	98	16,252,809 35.5	25,410,953 55.5	39,733,616 86.7
1961	45,132,526	93	16,342,597 36.2	25,217,950 55.9	39,409,279 87.3
1962	48,353,913	78	17,137,111 35.8	27,205,414 56.3	43,346,893 89.6
1963	51,642,431	71	22,039,016 42.7	32,280,303 62.5	47,134,139 91.3
1964	54,834,488	71	23,547,674 42.9	35,078,095 64.0	51,295,628 93.5
1965	58,232,480	59	24,369,380 41.8	35,189,488 60.4	54,999,133 94.4
1966	63,212,697	47	27,043,979 42.8	40,693,990 64.4	61,195,135 96.8
1967	64,814,771	39	34,282,071 52.9	48,715,003 75.2	63,525,264 98.0

Source: Coal Reports of Illinois, 1957-1967, Department of Mines and Minerals, State of Illinois, Table 10.

SALES OF COAL IN ILLINOIS BY THE LEADING COMPANIES  
AND THEIR SUBSIDIARIES IN 1967  
(From Mines Located in Eastern Interior Coal Province)

<u>Name of Company</u>	<u>Sales of Coal in Tons</u>	<u>Rank</u>	<u>Percentage of Total Sales</u>
Peabody Coal Company	13,320,890	1	28.5
General Dynamics Corporation	<u>7,531,907</u>	2	16.1
Freeman Coal Mining Corporation	3,933,322		( 8.4)
The United Electric Coal Companies	3,598,585		( 7.7)
Southwestern Illinois Coal Corporation	5,535,700	3	11.9
Consolidation Coal Co. (a subsidiary of Continental Oil Co.), Truax-Traer Division	4,363,324	4	9.3
Ayrshire Collieries Corporation	1,998,329	5	4.3
Old Ben Coal Corporation	1,970,377	6	4.2
Sahara Coal Co., Inc.	1,520,214	7	3.3
Zeigler Coal & Coke Co.	1,092,481	8	2.3
The Pittsburg & Midway Coal Mining Co., subsidiary of Gulf Oil Corporation	740,515	9	1.6
Island Creek Coal Co., West Kentucky Division	<u>442,737</u>	10	1.0
TOTAL of Leading Companies	38,516,474		82.5
TOTAL SALES of coal in Illinois	46,710,000		

Source: Answers to Government's questionnaire of July 15, 1968 and  
Gallagher Deposition Exhibit No. 3.

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 GOVERNMENT  
 EXHIBIT

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PRODUCTION OF COAL IN ILLINOIS (PRODUCING DISTRICT NO. 10),  
 INDIANA (PRODUCING DISTRICT NO. 11), AND WESTERN KENTUCKY  
 (PRODUCING DISTRICT NO. 9) BY THE LEADING COMPANIES 1/  
 AND THEIR SUBSIDIARIES IN CALENDAR YEAR 1957

<u>Name of Company</u>	<u>Production of Coal in Tons</u>	<u>Rank</u>	<u>Percentage of Total Production</u>
Peabody Coal Company 2/	20,250,902	1	22.1
Freeman Coal Mining Corporation, subsidiary of Material Service Corporation	6,905,475	2	7.5
West Kentucky Coal Co.	6,531,986	3	7.1
Ayrshire Collieries Corporation	5,778,910	4	6.3
The United Electric Coal Companies	4,512,096	5	4.9
Truax-Traer Coal Company 3/	4,162,618	6	4.5
Zeigler Coal & Coke Co. 4/	3,611,108	7	3.9
Old Ben Coal Corporation 5/	3,500,262	8	3.8
The Pittsburg & Midway Coal Mining Co.	2,514,432	9	2.7
Midland Electric Coal Corporation 6/	2,410,048	10	2.6
Sahara Coal Co., Inc. 7/	1,797,438	11	2.0
Snow Hill Coal Corporation	1,795,801	12	2.0
The Maumee Collieries Company	1,628,542	13	1.8
Rhos Coal Corporation	1,476,476	14	1.6
Stonefort Corporation 8/	1,153,538	15	1.3
TOTAL of Leading Companies	68,029,632		74.1
TOTAL PRODUCTION in Illinois, Indiana and Western Kentucky	91,839,000		

See footnotes on page 2.

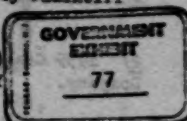
Agreed to by Plaintiff  
 Not Agreed to by Defendants

- 1/ Production in excess of 1,000,000 tons.
- 2/ 1957 Coal Report of Illinois shows 6,251 tons less for Peabody Coal Company.
- 3/ 1957 Coal Report of Illinois shows 7,745 tons more for Truax-Traer Coal Company.
- 4/ 1957 Coal Report of Illinois shows 5,557 tons more for Zeigler Coal & Coke Co.
- 5/ 1957 Coal Report of Illinois shows 19,001 tons more for Old Ben Coal Corporation.
- 6/ 1957 Coal Report of Illinois shows 42,842 tons less for Midland Electric Coal Corporation.
- 7/ 1957 Coal Report of Illinois shows 208,084 tons less for Sahara Coal Co., Inc.
- 8/ 1957 Coal Report of Illinois shows 9,144 tons less for Stonefort Corporation.

Source: "Report of Mine Performance . . . January through December, 1957 and 1958, for Illinois, Indiana and Western Kentucky, by districts" published by Mid-West Coal Producers Institute, Inc.; and Bituminous Coal Facts, 1964, published by National Coal Association.

Agreed to by Defendants  
Not agreed to by Plaintiff

PRODUCTION OF COAL IN ILLINOIS (PRODUCING DISTRICT NO. 10)  
INDIANA (PRODUCING DISTRICT NO. 11), AND WESTERN KENTUCKY  
(PRODUCING DISTRICT NO. 9) BY THE LEADING COMPANIES 1/  
AND THEIR SUBSIDIARIES IN CALENDAR YEAR 1959



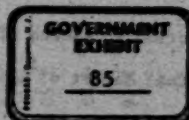
<u>Name of Company</u>	<u>Production of Coal in Tons</u>	<u>Rank</u>	<u>Percentage of Total Production</u>
Peabody Coal Company 2/	22,936,841	1	25.5
Freeman Coal Mining Corporation, subsidiary of Material Service Corporation	6,858,695	2	7.6
Ayrshire Collieries Corporation	6,135,629	3	6.8
West Kentucky Coal Co.	6,000,488	4	6.7
Truax-Traer Coal Company 3/	4,764,483	5	5.3
The United Electric Coal Companies 4/	4,338,544	6	4.8
Zeigler Coal & Coke Co. 5/	4,217,466	7	4.7
Old Ben Coal Corporation 6/	3,757,367	8	4.2
The Pittsburg & Midway Coal Mining Co.	3,177,063	9	3.5
Midland Electric Coal Corporation 7/	2,441,112	10	2.7
Sahara Coal Co., Inc. 8/	1,787,293	11	2.0
Snow Hill Coal Corporation	1,471,166	12	1.6
Rhos Coal Corporation	1,403,958	13	1.6
Southwestern Illinois Coal Corporation 9/	<u>1,155,384</u>	14	1.3
TOTAL of Leading Companies	70,445,489		78.3
TOTAL PRODUCTION in Illinois, Indiana and Western Kentucky	89,886,000		

See footnotes on page 2.



- 1/ Production in excess of 1,000,000 tons.
- 2/ 1959 Coal Report of Illinois shows 5,329 tons more for Peabody Coal Company.
- 3/ 1959 Coal Report of Illinois shows 2 tons less for Truax-Traser Coal Company.
- 4/ 1959 Coal Report of Illinois shows 5,516 tons more for The United Electric Coal Companies.
- 5/ 1959 Coal Report of Illinois shows 10 tons less for Zaigler Coal & Coke Co.
- 6/ 1959 Coal Report of Illinois shows 1 ton less for Old Ben Coal Corporation.
- 7/ 1959 Coal Report of Illinois shows 41,556 tons more for Midland Electric Coal Corporation.
- 8/ 1959 Coal Report of Illinois shows 149,842 tons less for Sahara Coal Co., Inc.
- 9/ 1959 Coal Report of Illinois shows 17,252 tons less for Southwestern Illinois Coal Corporation.

Source: "Report of Mine Performance . . . January through December, 1959 and 1960, for Illinois, Indiana and Western Kentucky, by districts" published by Mid-West Coal Producers Institute, Inc.; and Bituminous Coal Facts, 1968, published by National Coal Association.



Revised

PRODUCTION OF COAL IN ILLINOIS (PRODUCING DISTRICT NO. 10),  
 INDIANA (PRODUCING DISTRICT NO. 11), AND WESTERN KENTUCKY  
 (PRODUCING DISTRICT NO. 9) BY THE LEADING COMPANIES 1/  
 AND THEIR SUBSIDIARIES IN CALENDAR YEAR 1967

<u>Name of Company</u>	<u>Production of Coal in Tons</u>	<u>Rank</u>	<u>Percentage of Total Production</u>
Peabody Coal Company <u>2/</u>	48,808,013 <u>3/</u>	1	37.7
General Dynamics Corporation	<u>14,123,594</u>	2	10.9
Freeman Coal Mining Corporation	8,380,496		( 6.5) <sup>2</sup>
The United Electric Coal Companies <u>4/</u>	5,743,096		( 4.4)
Old Ben Coal Corporation	9,457,667	3	7.3
Island Creek Coal Co., West Kentucky Division	9,060,961	4	7.0
Ayrshire Collieries Corporation	8,606,021	5	6.6
Southwestern Illinois Coal Corporation	7,526,586	6	5.8
The Pittsburg & Midway Coal Mining Co., subsidiary of Gulf Oil Corporation	7,051,786	7	5.5
Consolidation Coal Co. (a subsidiary of Continental Oil Co.), Truax-Traer Division <u>5/</u>	6,906,344	8	5.3
Zeigler Coal & Coke Co. <u>6/</u>	3,940,921	9	3.0
Sahara Coal Co., Inc. <u>7/</u>	<u>2,823,526</u>	10	<u>2.2</u>
TOTAL of Leading Companies	118,303,399		91.4
TOTAL PRODUCTION in Illinois, Indiana and Western Kentucky	129,500,000		

See footnotes on page 2.

1/ Production in excess of 1,000,000 tons.

2/ 1967 Coal Report of Illinois shows 15,832 tons less for Peabody Coal Company.

3/ Pursuant to Final Judgment dated October 23, 1967 in United States v. Peabody Coal Company et al., Civil Action No. 67 C 1621 (N.D. Illinois), 1967 Trade Cases Sec. 72,213, Peabody is to divest itself on or before October 23, 1969 of mines having annual production of 6,000,000 tons of coal. In compliance with this judgment, Peabody is in the process of selling its Mecco, Allendale, and Elm (a combination of the Bright Star, Middle Grove, and Elmwood [not in production in 1967] mines) Mines, all of which are located in Illinois. In 1967 these mines produced a total of 2,495,297 tons of coal.

This figure includes 1,436,358 tons sold by Squaw Creek Mine and 4,625,456 tons sold by Sinclair Mine during 1965 since production figures for these two mines were not available. The Squaw Creek Mine is operated pursuant to a joint venture between Peabody and Aluminum Company of America. The entire production of the mine is consumed by Alcoa and is not available for sale on the open market. Peabody receives 40 per cent of the operating profits from this mine.

4/ 1967 Coal Report of Illinois shows 193 tons more for The United Electric Coal Companies.

5/ 1967 Coal Report of Illinois shows 2 tons more for Truax-Traer Division of Consolidation Coal Co.

6/ 1967 Coal Report of Illinois shows 1 ton less for Zeigler Coal & Coke Co.

7/ 1967 Coal Report of Illinois shows 273,019 tons less for Sahara Coal Co., Inc.

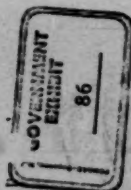
Source: "Report of Mine Performance . . . January through December, 1966 and 1967, for Illinois, Indiana and Western Kentucky, by districts" published by Mid-West Coal Producers Institute, Inc.; Bituminous Coal Facts, 1968, published by National Coal Association; and Peabody's Answers to Government's Questionnaire of July 15, 1968.

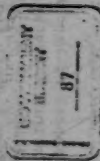
Agreed to by Defendants  
Not agreed to by Plaintiff

PRODUCTION OF COAL IN ILLINOIS (PRODUCING DISTRICT NO. 10), INDIANA (PRODUCING DISTRICT NO. 11), AND WESTERN KENTUCKY (PRODUCING DISTRICT NO. 9), 1957-1967

Year	Total Production Tons	Production of Top 2		Production of Top 4		Production of Top 6	
		Tons	% of Total	Tons	% of Total	Tons	% of Total
1957	91,039,000	27,156,377	29.6	39,467,273	43.0	60,177,837	65.5
1958	87,016,000	26,530,109	30.5	37,974,636	43.6	58,991,903	67.6
1959	89,886,000	29,795,536	33.1	41,931,653	46.6	64,627,688	71.9
1960	92,102,000	30,673,473	33.3	42,812,763	46.5	65,886,556	71.5
1961	90,964,000	31,302,531	34.4	42,911,278	47.2	65,513,039	72.1
1962	96,251,000	34,069,705	35.4	46,208,972	48.1	72,845,323	75.7
1963	102,552,000	42,596,769	41.5	55,104,706	53.7	80,153,606	78.2
1964	107,954,000	46,843,007	43.4	59,653,974	55.3	87,402,506	81.0
1965	113,247,000	46,221,904	42.6	63,196,841	55.8	96,511,201	85.2
1966	123,087,000	54,258,079	44.1	70,955,144	57.6	109,398,100	88.9
1967	129,500,000	62,931,607	48.6	81,450,215	62.9	110,303,359	91.4

Sources: "Report of Mine Performance . . . January through December . . . for Illinois, Indiana and Western Kentucky, by districts" published by Mid-West Coal Producers Institute, Inc.; Bituminous Coal Facts, published by National Coal Association; letter dated November 4, 1966 from Liberty Coal Company to Department of Justice; 1966 Annual Report of Kentucky Department of Mines and Minerals; and Peabody's response to Government's questionnaire of July 15, 1966.





# ACQUISITIONS IN EASTERN INTERIOR COAL PROVINCE SINCE 1954

Name of Acquiring Company and its subsidiaries	Name of Company Acquired	Date of Acquisition	Name of Mine Acquired	Cost (Dollars)	Production Last Full Year Before Acquisition (Tons)
	Morgan Mines, Inc.	1956	Berry Mine	750,000.00	407,410
	Midwest-Radiant Corporation	1956	Midwest Mine )		507,600
	Perry Coal Company	1956	Br. Ellen Mine )	5,528,771.00	1,070,339
	Poplar Ridge Coal Company	1956	Poplar Ridge Mine	892,411.00	807,265
	Terteling Bros., Inc.	1957	Pond River Mine		427,388
			Vogels Mine	4,002,400.00	598,087
	Black Star Coal Corporation	1958	Alva Mine	3,170,000.00	550,000
	The Monroe Collieries Company	1959	Linton Mine )		NA
			Chickataine Mine )	7,411,500.00	478,690
			Old Glory Mine )		113,659
			Airlines Mine )		760,476
	Hart & Hart	1961	Hart & Hart Mine	1,150,000.00	100,000
	Morgan Coal Company	1963	Edwards Mine	600,000.00	175,000
			Utility Mine	750,000.00	200,000
	Riverview Coal Company, Inc.	1963	Riverview Mine	2,500,000.00	600,000
	Midland Electric Coal Corporation	1963	Green Diamond Mine )		968,321
			Viking Mine )		709,787
			Green Valley Mine )		823,185
			Ashland-Mineral Mine )		290,351
			Windle Grove-Ingates Mine )	15,928,117.00	1,266,676
			Victoria Mine )		860,768



<u>Name of Acquiring Company</u>	<u>Name of Company Acquired</u>	<u>Date of Acquisition</u>	<u>Name of Mine Acquired</u>	<u>Cost (Dollars)</u>	<u>Production Last Full Year before Acquisition (Tons)</u>
PEARODY COAL COMPANY and its subsidiaries (Contd.)	Stonefort Coal Mining Company, Inc.	January 1965	Allendale Mine Will Scarlet Mine	6,639,300.00	531,690 852,084
S. WESTERN ILLINOIS COAL CORPORATION	NONE				
CHUAX-TRAHER COAL COMPANY	Little Sister Coal Corporation	5-18-56	Little-Sister Mine	175,000 shares of common stock at \$7-1/2 per share	662,021
OLD BEI COAL CORPORATION and its subsidiary	New Kathleen Mine of Union Colliery Company	5-29-58	New Kathleen Mine	1,046,044.00	1,156,065
SEA COAL CO., INC.	Phos Coal Division Interlake Steel Corp.	10-13-65	Kings Mine Phos Mine Blackfoot #5 Mine	2/ 15,866,510.00	507,754 1,731,540 715,105
	NONE				

2/ This mine closed 3/31/66 by Princeton Mining Co. and reopened as a new mine on a lease basis by Kings Station Coal Corporation (subsidiary of Sea Coal Corporation) on 9/26/66. This was not the acquisition of an active coal producer or of a producing property but the acquisition of mining rights from several sources.

<u>Name of Acquiring Company</u>	<u>Name of Company Acquired</u>	<u>Date of Acquisition</u>	<u>Name of Mine Acquired</u>	<u>Cost (dollars)</u>	<u>Production Last Full Year before liquidation (tons)</u>
ZEIGLER COAL & COKE CO. and its subsidiary	Midwest Utilities Co. Hoffat Coal Co.	1-1-57 3-15-55	Bradbury Mine Hoffat Mine	2,720,000.00 600,000.00	847,498 295,412
A HICK COLLIERIES CORPORATION	Caracas Coal Company Friar Tuck Mine of Sherwood-Templeton Co.	Feb. 1956 Jan., 1960	Caracas Mine Friar Tuck Mine	565,108.03 1,550,000.00	296,099 401,320
THE UNITED ELECTRIC COAL COMPANIES	NONE				
WESTERN COAL FIRING CORPORATION and subsidiary		2-1-55 6-30-59 6-30-59	Orient No. 3 Mine Orient No. 5 Mine Orient No. 2 Mine	8,082,000.00 211,608.94 1,129,197.63	1,579,296 1/2 1,071,377 1/2
THE PITTSBURGH & MIDWAY COAL MINING CO.	NONE				
THE WESTON-TEMPLETON COAL COMPANY, INC.		4-1-61	Pioneer Mine	700,729.03	139,954 1/2
WARRAPPA RAY COAL, INC.	NONE				

These figures taken from Coal Report of Illinois, 1954, 1958 and 1960.

<u>Name of Acquiring Company</u>	<u>Name of Company Acquired</u>	<u>Date of Acquisition</u>	<u>Name of Mine Acquired</u>	<u>Cost (Dollars)</u>	<u>Production Last Full Year before Acquisition (Tons)</u>
ISLAND CREEK COAL COMPANY	Island Creek Coal Co.	1-29-68	East Diamond Pleasant View Atkinson Fies Crescent Williams Uniontown Hamilton	149,470,600.00	2,374,000 566,000 1,472,000 1,443,000 1,049,000 237,000 1,421,000 Under construction
	West Kentucky Coal Co.	12-31-64	East Diamond Pleasant View Atkinson Fies Crescent Williams Uniontown Stoney Point	15,930,717.00	1,878,671 1,106,938 Closed 1,035,214 922,311 162,939 1,498,218 Closed
ASHVILLE COAL, INC. (Subsidiary of Island Creek Coal Company)	Hashville Coal Co., Inc.	9-15-55	Fies Crescent Williams Uniontown Stoney Point	17,359,368.00	Not available " " " "

<u>Name of Acquiring Company</u>	<u>Name of Company Acquired</u>	<u>Date of Acquisition</u>	<u>Name of Mine Acquired</u>	<u>Cost (dollars)</u>	<u>Production Last Full Year before Acquisition (tons)</u>
ESSEX VALLEY COAL COMPANY, INC.	NONE				
BLACK TAP MINING COMPANY	NONE				
GIBBSALAN COAL CORPORATION	NONE				
GREEN COAL CO.	NONE				
HAUGHTON COAL CO.	NONE				
KIRKPATRICK MINING COMPANY	NONE				
LIBERTY COAL COMPANY	NONE				
MORRIS MROS. CO.	NONE				
MORRIS ENTERPRISES	NONE				
PIALTO COAL COMPANY, INC.	Sternberg Coal Corp.	1963	Jiffy Mine		Not available

Production  
Last Full Year  
Before Acquisition  
(Tons)

Cost  
(Dollars)

Name of Mine Acquired

Date of  
Acquisition

Name of Company Acquired

Name of Acquiring Company

TAB-BANDGETT, Joint Venture

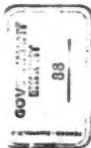
NONE

ONE COAL COMPANY

NONE

See: Answers to Government's questionnaire of August 12, 1963.





Revised

COMMON KNOWN CUSTOMERS OF THE UNITED ELECTRIC COAL COMPANIES AND PRETMAN COAL MINING CORPORATION  
SHOWING DESTINATION POINTS - 1965

Name of Customer	The United Electric Coal Companies				Pretman Coal Mining Corporation			
	Mine	Destination	Volume Tons	Revenue Dollars	Mine	Destination	Volume Tons	Revenue Dollars
Caterpillar Tractor Co. Peoria, Illinois	Cuba-Buckheart	Plant at Montgomery, Ill.	123,879	29,143	Crown	Plant at Decatur, Illinois	139,257	30,067
	Cuba-Buckheart	Plant at E. Peoria, Ill.	64,000	19,810				
Central Illinois Light Co. Peoria, Illinois	Cuba-Buckheart	Liberty St. Plant Peoria, Illinois	1,455,033	364,870	Crown	Plant at Springfield, Ill.	83,769	18,290
Central Illinois Public Service Company Springfield, Illinois	Fidelity	Grand Tower Plant Grand Tower, Ill.	46,775	15,089	Orient #4	Grand Tower Plant Grand Tower, Ill.	303,366	102,803
	Cuba-Buckheart	Haradonia Plant Haradonia, Ill.	387,917	100,484	Crown	Haradonia Plant Haradonia, Ill.	262,892	82,148
	Banner	Haradonia Plant Haradonia, Ill.	221,394	52,252				
Commonwealth Edison Co. Chicago, Illinois	Cuba-Buckheart	River Stations	5,514,897	1,542,127	Crown	River Stations	3,159,482	816,405
	Banner	River Stations	230,444	51,452	Crown	State Line Plant Hammond, Indiana	2,247,840	580,847
					Orient #5	State Line Plant Hammond, Indiana	74,817	20,551
					Orient #5	Vaukegon Plant Vaukegon, Illinois	355,335	97,757
					Orient #4	Vaukegon Plant Vaukegon, Illinois	63,673	17,493

Name of Customer	The United Electric Coal Corporation				Freeman Coal Mining Corporation			
	Pine	Destination	Boiler	Number of Tons	Pine	Destination	Boiler	Number of Tons
Dairyland Power Cooperative La Crosse, Wisconsin	Fidelity	Alma Plant Alma, Wisconsin	137,674 2/	25,308	Not available	Alma Plant Alma, Wisconsin	289,327 2/	56,620
	Fidelity	E.J. Stoneman Plant Cassville, Wisconsin	63,539 2/	11,063	NA	E.J. Stoneman Plant Cassville, Wis.	36,166 2/	7,147
Fossil Minerals FICO Operations Kochuk, Iowa	Cuba-Buckheart	Plant at Kochuk, Iowa	119,997	31,086	Orient #3	Plant at Kochuk, Iowa	72,927	25,589
	Mary Moore	Vermillion Plant Oakwood, Illinois	81,777	24,524	Orient #4	Vermillion Plant Oakwood, Illinois	249,778	37,938
Illinois Power Co. Peoria, Illinois	Panner	Hennepin Plant Hennepin, Illinois	283,255	65,204	Orient #5	Vermillion Plant Oakwood, Illinois	522,725	179,015
	Cuba-Buckheart	Hennepin Plant Hennepin, Illinois	351,228	93,775	Orient #3	Wood River Plant Alton, Illinois	339,064	116,918
Inland Steel Co. Chicago, Illinois	Cuba-Buckheart	E. Chicago Plant E. Chicago, Ind.	134,016	36,149	Orient #3	E. Chicago Plant E. Chicago, Ind.	1,713,329	332,737
	Cuba-Buckheart	Oglesby Plant Oglesby, Illinois	1,170,490	275,406	Orient #4	Cape Girardeau Plant Cape Girardeau, Mo.	710,530	168,372
Chicago Electric Light & Power Co. Chicago, Illinois	Cuba-Buckheart	Oglesby Plant Oglesby, Illinois	1,170,490	275,406	Orient #3	Des Moines Plant Des Moines, Iowa	114,860	26,715
	Cuba-Buckheart	Oglesby Plant Oglesby, Illinois	1,170,490	275,406	Orient #3	Milwaukee Plant Milwaukee, Wis.	149,998	27,132

Name of Customer	The United Electric Coal Companies				Preston Coal Mining Corporation			
	Mine	Destination	Dollar Volume	Number of Tons	Mine	Destination	Dollar Volume	Number of Tons
Northern States Power Co., Minneapolis, Minn.	Fidelity	Mississippi River Stations	999,101	280,416	Orient #5	Riverside Plant (A Mississippi River Station)	NA	3,053 1/2
Tennessee Valley Authority Chattanooga, Tenn.	Fidelity	Shawnee Steam Plant Chiles, Kentucky	749,276	263,373	Orient #3	Shawnee Steam Plant Chiles, Kentucky	1,251,467	431,194
					Orient #4	Shawnee Steam Plant Chiles, Kentucky	275,307	97,283
					Orient #5	Shawnee Steam Plant Chiles, Kentucky	951,615	327,673
Union Electric Company St. Louis, Missouri	NA	Venice Plant Venice, Illinois	NA	3,000 1/2	Orient #3	Venice Plant Venice, Illinois	311,936	128,899
	Fidelity	Shawnee Plant Mill Creek, Mo.	1,653,520	482,722	Orient #2	Shawnee Plant Mill Creek, Mo.	417,496	172,519
Meridian Public Service Co., Meridian, Miss.	Fidelity	J.P. Pulliam Plant Green Bay, Wis.	301,224	84,377	Orient #4	J.P. Pulliam Plant Green Bay, Wis.	181,134	50,738
					Orient #5	J.P. Pulliam Plant Green Bay, Wis.	389,616	109,151
Total Sales to Concern Customers as of 12/31/1965			14,119,136	3,051,986			14,667,293	4,067,056
Sales to Concern Customers as a Per Cent of Total Sales				5,486,994				7,915,832
Production on following page				70.25				51.45

## Footnotes:

Source: Answers to Government's questionnaire of July 15, 1968.

- 1/ Source--Letter with attachment from John P. Madgett, Dairyland Power Cooperative, to the Department of Justice dated April 23, 1968
- 2/ Includes freight.
- 3/ In 1964 Freeman Coal Mining Corporation's Orient #5 Mine shipped 43,018 tons of coal to the Riverside Plant, a Mississippi River Station of Northern States Power Co. In this same year The United Electric Coal Companies shipped 33,491 tons to Northern States Power Co.'s Riverside Station and a total of 311,373 tons to all of the Mississippi River Stations of Northern States Power Co. Source--Letter with attachments from V. H. Wood, Northern States Power Co., to the Department of Justice dated May 31, 1968.
- 4/ Source--Letter from Stewart W. Smith, Jr., Union Electric Company, to the Department of Justice dated March 5, 1969.



Revised

COMMON KNOW CUSTOMERS OF THE UNITED ELECTRIC COAL COMPANIES AND PEERLESS COAL MINING CORPORATION  
SHOWING DESTINATION POINTS - 1966

Name of Customer	The United Electric Coal Companies				Peerless Coal Mining Corporation			
	Mine	Destination	Dollar Volume	Number of Tons	Mine	Destination	Dollar Volume	Number of Tons
Caterpillar Tractor Co. Peoria, Illinois	Cuba-Buckheart	Plant at F. Peoria, Illinois	94,520	21,533	Crown	Plant at Decatur, Illinois	175,023	37,106
	Cuba-Buckheart	Plant at Montgomery, Ill.	128,788	29,573				
Central Illinois Light Co. Peoria, Illinois	Cuba-Buckheart	Liberty St. Plant Peoria, Illinois	1,357,352	333,345	NA	Plant at Springfield, Ill.	66,536 1/2	14,052
Central Illinois Public Service Company Springfield, Illinois	Cuba-Buckheart	Mercedonia Plant Mercedonia, Ill.	478,214	120,110	Crown	Mercedonia Plant Mercedonia, Ill.	279,869	84,614
	Banner	Mercedonia Plant Mercedonia, Ill.	372,838	81,917	Orient #4	Grand Tower Plant Grand Tower, Ill.	311,209	100,143
	Fidelity	Grand Tower Plant Grand Tower, Ill.	55,269	17,186	Orient #3	Grand Tower Plant Grand Tower, Ill.	50,779	16,677
Commonwealth Edison Co. Chicago, Illinois	Cuba-Buckheart	River Stations	5,102,269	1,605,459	Orient #5	Waukegan Plant Waukegan, Illinois	136,606	37,529
	Banner	River Stations	822,014	172,151	Crown	River Stations 2/	5,888,360	1,627,308
De Land Power Co- operative 1/ La Crosse, Wisconsin	Fidelity	Alma Plant Alma, Wisconsin	179,669 2/	35,096	NA	Alma Plant Alma, Wisconsin	320,693 2/	59,272
	Fidelity	E.J. Stoneman Plant Cassville, Wisconsin	69,770 2/	12,755	NA	E.J. Stoneman Plant Cassville, Wisconsin	96,922 2/	18,000



Name of Customer	The United Electric Coal Companies				Preston Coal Mining Corporation			
	Mine	Destination	Volume	Dollar	Mine	Destination	Volume	Dollar
North Western Electric Operations Keokuk, Iowa	Cuba-Buckheart	Plant at Keokuk, Iowa	164,408	41,213	Orient #3	Plant at Keokuk, Iowa	94,664	31,131
Illinois Power Co. St. Louis, Illinois	Cuba-Buckheart	Hennepin Plant Hennepin, Illinois	368,562	91,679	Orient #4	Vermillion Plant Oakwood, Ill.	376,376	123,894
	Banner	Hennepin Plant Hennepin, Illinois	337,989	72,818	Orient #3	Wood River Plant Alton, Illinois	406,227	140,717
					Orient #5	Wood River Plant Alton, Illinois	45,737	15,771
Marquette Cement Mfg. Co. Chicago, Illinois	Cuba-Buckheart	Plant at Oglesby, Illinois	1,231,517	283,692	NA	Plant at Oglesby, Illinois	16,250 1/2	3,934
					Orient #4	Cape Girardeau Plant Cape Girardeau, Mo.	726,287	166,219
					Orient #3	Des Moines Plant Des Moines, Iowa	80,619	21,666
					Orient #3	Milwaukee Plant Milwaukee, Wis.	231,909	43,519
Tennessee Valley Authority Chattanooga, Tenn.	Fidelity	Shannon Steam Plant Chillicothe, Kentucky	747,125	254,607	Orient #3	Shannon Steam Plant Chillicothe, Kentucky	1,371,666	434,662
					Orient #4	Shannon Steam Plant Chillicothe, Kentucky	500,252	172,803
					Orient #5	Shannon Steam Plant Chillicothe, Kentucky	605,996	206,493

Name of Customer	The United Electric Coal Companies				Fresman Coal Mining Corporation			
	Mine	Destination	Dollar Volume	Number of Tons	Mine	Destination	Dollar Volume	Number of Tons
A. M. Electric Company St. Louis, Missouri	Fidelity	Venice Plant Venice, Illinois	110,884	31,420	Orient #3	Venice Plant Venice, Illinois	437,478	170,043
	Fidelity	Meramec Plant Hill Crest, Mo.	1,371,814	387,998	Orient #3	Meramec Plant Hill Crest, Mo.	281,455	109,280
Wiscor in Public Service Co. Gre. Bay, Wisconsin	Fidelity	J.P. Pulliam Plant Green Bay, Wis.	441,541	116,617	Orient #4	J.P. Pulliam Plant Green Bay, Wis.	317,346	83,512
					Orient #5	J.P. Pulliam Plant Green Bay, Wis.	102,415	26,931
Total Sales to Common Customers			14,034,529	3,706,169			12,924,634	3,765,897
Total Sales in 1966				5,964,160			8,562,402	
Sales to Common Customers as Per Cent of Total Sales				62.15				44.05

Sources: Answers to Government's questionnaire of July 15, 1968.

- 1/ Source—Letter from Q. V. Wellington, Central Illinois Light Co., to Department of Justice dated October 21, 1966.
- 2/ Source—Letter with attachment from V. T. Reid, Central Illinois Light Co., to Department of Justice dated March 23, 1968.
- 3/ Commonwealth Edison Co. apparently took title to the coal at the dock at Havana, Illinois and shipped it to its river stations.
- 4/ Source—Letter with attachment from John F. Madgett, Dairyland Power Cooperative, to the Department of Justice dated April 23, 1968.
- 5/ Includes freight.
- 6/ Letter with attachment from William R. Engelhardt of Norman, Engelhardt, Holland, Millich, Franke & Lauritzen to Department of Justice dated July 19, 1968
- 7/ Includes tax.



Revised

COMMON KNOWN CUSTOMERS OF THE UNITED ELECTRIC COAL COMPANIES AND FREEMAN COAL MINING CORPORATION  
SHOWING DESTINATION POINTS - 1967

Name of Customer	The United Electric Coal Companies				Freeman Coal Mining Corporation			
	Mine	Destination	Volume	Number of Tons	Mine	Destination	Volume	Number of Tons
Caterpillar Tractor Co. Peoria, Illinois	Cuba-Buckheart	Plant at E. Peoria, Ill.	98,271	21,886	Crown	Plant at Decatur, Illinois	163,616	34,295
	Cuba-Buckheart	Plant at Van-gumery, Ill.	134,496	30,223				
Central Illinois Electric and Gas Co. (Division of Commonwealth Edison Co.) Chicago, Illinois	Fidelity	Plant at Rockford, Illinois	320,790	86,700	Orient #5	Plant at Rockford, Illinois	136,538	32,194
Central Illinois Light Co. Peoria, Illinois	Cuba-Buckheart	Liberty St. Plant Peoria, Illinois	1,460,273	332,073	HA	Plant at Springfield, Ill. 1/	56,035 2/	11,244 1/2
Central Illinois Public Service Company Springfield, Illinois	Cuba-Buckheart	Mercedonia Plant Mercedonia, Illinois	264,911	66,469	Crown	Mercedonia Plant Mercedonia, Illinois	307,658	91,838
	Banner	Mercedonia Plant Mercedonia, Illinois	429,329	91,464	Orient #4	Grand Tower Plant Grand Tower, Ill.	417,239	132,457
	Fidelity	Grand Tower Plant Grand Tower, Illinois	32,089	16,027				
Co. wealth Edison Co. Chicago, Illinois	Cuba-Buckheart Banner	River Stations River Stations	6,204,707 624,922	1,745,575 132,472	Crown	River Stations	6,114,470	1,726,083

The United Electric Coal Companies		Fremont Coal Mining Corporation	
Place	Destination	Place	Destination
Fidelity	Alma Plant Alma, Wisconsin	MA	Alma Plant Alma, Wisconsin
Fidelity	F.J. Stoeness Plant Chesville, Wis.	MA	F.J. Stoeness Plant Chesville, Wis.
Cuba-Buckheart	Plant at Keokuk, Iowa	Orient #3	Plant at Keokuk, Iowa
Cuba-Buckheart	Kennecott Plant Kennecott, Illinois	Orient #3	Wood River Plant Alton, Illinois
Banner	Kennecott Plant Kennecott, Illinois	Orient #4	Vermillion Plant Oakwood, Illinois
Banner	Wood River Plant Alton, Illinois		
Cuba-Buckheart	Oglesby Plant Oglesby, Illinois	Orient #5	Cape Girardeau Plant Cape Girardeau, Mo.
Banner	Oglesby Plant Oglesby, Illinois	Orient #6	Wilwaukee Plant Milwaukee, Wis.
		Orient #3	Des Moines Plant Des Moines, Iowa
Fidelity	Shannon Steam Plant Chillicothe, Kentucky	Orient #3	Shannon Steam Plant Chillicothe, Kentucky
		Orient #4	Shannon Steam Plant Chillicothe, Kentucky
			Shannon Steam Plant Chillicothe, Kentucky

Place	Destination	Volume	Number of Tons
MA	Alma Plant	146,223 1/2	77,997
MA	F.J. Stoeness Plant	151,087 1/2	86,995
Orient #3	Plant at Keokuk, Iowa	94,166	30,484
Orient #3	Wood River Plant	525,282	181,132
Orient #4	Vermillion Plant	139,000	39,484
Orient #5	Cape Girardeau Plant	405,391	94,767
Orient #6	Wilwaukee Plant	181,706	35,477
Orient #3	Des Moines Plant	67,956	16,377
Orient #3	Shannon Steam Plant	1,044,484	505,30
Orient #4	Shannon Steam Plant	504,469	187,179
	Shannon Steam Plant	611,896	191,80

Place	Destination	Volume	Number of Tons
Fidelity	Alma Plant	203,843 1/2	35,447
Fidelity	F.J. Stoeness Plant	43,861 1/2	7,636
Cuba-Buckheart	Plant at Keokuk, Iowa	113,999	24,731
Cuba-Buckheart	Kennecott Plant	165,991	39,235
Banner	Kennecott Plant	305,990	63,534
Banner	Wood River Plant	NA	CR 2/
Cuba-Buckheart	Oglesby Plant	513,212	117,440
Banner	Oglesby Plant	873,007	166,287
Fidelity	Shannon Steam Plant	636,576	213,000

Place	Destination	Volume	Number of Tons
MA	Alma Plant	146,223 1/2	77,997
MA	F.J. Stoeness Plant	151,087 1/2	86,995
Orient #3	Plant at Keokuk, Iowa	94,166	30,484
Orient #3	Wood River Plant	525,282	181,132
Orient #4	Vermillion Plant	139,000	39,484
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Orient #3	Des Moines Plant	67,956	16,377
Orient #3	Shannon Steam Plant	1,044,484	505,30
Orient #4	Shannon Steam Plant	504,469	187,179
	Shannon Steam Plant	611,896	191,80

Name of Customer	The United Electric Coal Corporation				Peoples Coal Mining Corporation			
	Vine	Destination	Dollar Volume	Number of Tons	Vine	Destination	Dollar Volume	Number of Tons
Union Electric Company St. Louis, Missouri	Fidelity	Venice Plant Venice, Illinois	73,245	20,185	Orient #1	Venice Plant Venice, Illinois	295,308	112,369
W. C. & P. Public Service Co., Green Bay, Wisconsin	Fidelity	Herman Plant Hill Crest, Mo.	980,554	277,293	Orient #3	Herman Plant Hill Crest, Mo.	509,538	191,098
Total Sales to Common Customers	Fidelity	J.P. Pulliam Plant Green Bay, Wis.	220,462	11,100	Orient #4	J.P. Pulliam Plant Green Bay, Wis.	161,508	123,087
Total Sales in 1967			11,007,456	3,631,445			13,229,596	3,882,961
Sales to Common Customers as Per Cent of Total Sales				5,913,500			9,077,563	12.15
				61.63				

Sources: Answers to Government's questionnaire of July 15, 1968

- 1/ Source—Letter from G. W. Hollington, Central Illinois Light Co., to Department of Justice dated October 21, 1966.
- 2/ Source—Letter with attachment from W. W. Reid, Central Illinois Light Co., to Department of Justice dated March 23, 1968.
- 3/ Source—Letter with attachment from John P. Padgett, Dairyland Power Cooperative, to the Department of Justice dated April 23, 1968.
- 4/ Includes Freight.
- 5/ Correspondence with attachments from A. Krushevich, Illinois Power Company, to Department of Justice dated March 12, 1968.



GX 91

PER CENT OF SALES OF EACH COMPANY TO IDENTICAL CUSTOMER  
FACILITIES BY THE UNITED ELECTRIC COAL COMPANIES AND  
FREEMAN COAL MINING CORPORATION FOR THE YEARS 1965-1967

	<u>1965</u> <u>2</u>	<u>1966</u> <u>2</u>	<u>1967</u> <u>2</u>
The United Electric Coal Companies	54.7	52.9	48.2
Freeman Coal Mining Corporation	37.4	37.0	39.8

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Source: Answers to Government's Questionnaire of July 15, 1968; Letter with attachment from John P. Madgett, Dairyland Power Cooperative, to the Department of Justice dated April 23, 1968; Letter with attachments from V. H. Wood, Northern States Power Co., to the Department of Justice dated May 31, 1968; Letter from Stewart W. Smith, Jr., Union Electric Company, to the Department of Justice dated March 5, 1969; Letter with attachment from William R. Engelhardt of Norman, Engelhardt, Holland, Billick, Franke & Lauritzen to the Department of Justice dated July 19, 1968; and Letter with attachments from A. Kraakevik, Illinois Power Company, to Department of Justice dated March 12, 1968.

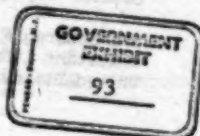
## CENTRAL ILLINOIS PUBLIC SERVICE COMPANY

GENERAL OFFICES

227 E. ADAMS ST.

SPRINGFIELD, ILLINOIS 62701

October 28, 1966

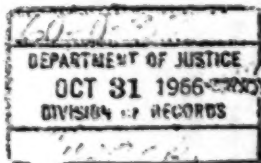


The Honorable Donald F. Turner  
 Assistant Attorney General  
 United States Department of Justice  
 Room 2634 United States Courthouse  
 Chicago, Illinois 60604

Dear Mr. Turner:

We have Mr. Bertram M. Long's letter of October 14, 1966 requesting certain information concerning the proposed acquisition of the stock of The United Electric Coal Companies by General Dynamics Corporation including coal purchases made by Central Illinois Public Service Company. The information requested is as follows:

1. The names of all coal suppliers for the years 1964 and 1965 are included on the attached tabulation.
2. Amount of coal in dollars and tons purchased is included in tabulation with 1.
3. Purchases of coal mined out-of-State by tons is included in tabulation with 1.
4. For many years it has been our practice to negotiate on an individual basis the terms of our coal purchases from our several coal suppliers. Several factors are considered in our coal purchasing decisions. Among these factors are: type of product (dust, screenings, carbon, etc.), BTU content, cost per million BTU (F.O.B. generating plant), sulfur and other impurities content, moisture content, amount of resulting ash, etc. Based upon the application of such factors, our coal purchases from Freeman Coal Mining Corporation and The United Electric Coal Companies have resulted in these two companies being among the principal suppliers of coal to two of our four electric generating stations (no coal is purchased from either company for use at our other two generating stations). In 1964 Freeman provided 24.8 percent and United Electric 2.9 percent of the total coal requirements at one of the generating stations, while at the other generating station the amounts were 12.3 percent and 23.8 percent, respectively. Similarly, in 1965,



Page 2  
October 28, 1966

The Honorable Donald F. Turner  
Assistant Attorney General  
United States Department of Justice

the relationships were 22.2 percent for Freeman and 3.0 percent for United Electric at the first station and 12.1 percent and 26.5 percent, respectively, for the second station. All factors considered, we have found the two companies to be competitive.

5. We do not know what effect, if any, there would be upon this company or other public utilities if General Dynamics Corporation were to be successful in acquiring all of the stock of The United Electric Coal Companies.

We trust that the above information is sufficiently complete for your purposes.

Yours very truly,



*K. E. Bowen*

K. E. Bowen  
Vice President



COAL PURCHASES - 1964 & 1965

<u>Suppliers</u>	<u>Cost-1964</u>	<u>Tons-1964</u>	<u>Cost-1965</u>	<u>Tons-1965</u>
Consolidation Coal Company	\$ 785,214	214,830	\$1,135,352	334,939
Truax-Traer Coal Company	667,122	214,110	535,320	145,846
Freeman Coal Mining Corporation	788,385	191,355	613,640	193,561
Freebody Coal Company	735,765	182,374	795,940	193,945
The United Electric Coal Companies	648,262	166,236	795,283	195,450
Republic Coal & Coke Company	468,096	152,417	760,927	193,426
Old Ben Coal Corporation	563,622	147,750	455,731	148,589
Sahara Coal Company, Inc.	525,385	128,914	486,957	127,108
Sterling-Midland Coal Company	353,337	115,021	304,323	73,877
Bell & Zoller Coal Company	303,148	80,366	363,355	118,607
Poreyth Coal Company	149,713	46,952	311,191	80,705
Gibson Coal Company	181,146	42,626	210,039	67,670
Enders Coal & Coke Company	11,606	4,068	99,666	23,675
Southern Illinois Co-op Coal Sales Co.	6,583	2,013	23,152	7,420
R. S. & K. Coal Corporation	5,547	1,871	53,672	18,108
Sullivan Enterprises	5,821	1,699	58,277	18,323
Midvale Coal Company	2,358	762		
Royal Fuel Corporation	898	234		
Reliable Coal & Mining Company	351	118		
Toledo Grain Company				
Lafayette Coal Company				
Illinois Central Railroad Company				
<b>Total</b>	<b>\$6,202,367</b>	<b>1,694,424</b>	<b>\$7,061,151</b>	<b>1,959,232</b>
<b>Mined outside Illinois</b>		<b>48,965</b>		<b>67,670</b>

## ILLINOIS POWER COMPANY

510 South 27th Street  
 Decatur, Illinois 62525



October 17, 1966

Mr. Bertram M. Long  
 Assistant Chief, Midwest Office  
 Antitrust Division  
 United States Department of Justice  
 Room 2634 United States Courthouse  
 Chicago, Illinois 60604

OCT 21 1966  
 RECEIVED BY [unclear]  
 DATE 10-21-66

Dear Mr. Long:

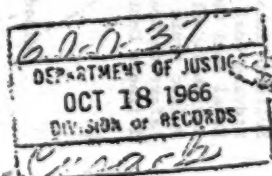
- (3) Both United Electric Coal Companies and Freeman Coal Mining Corporation have bid on supplying coal to our company. Other area coal suppliers also having bid for these requirements has satisfied us that the two named companies you have questioned have in fact held themselves out to be competitors.

I regret that due to my absence from the office for a few days that there has been a delay in responding to your letter.

Very truly yours,

Illinois Power Company

By A. Kraakevik  
 A. Kraakevik  
 Vice President



AK/g



## MINNAPOLIS POWER CO.

## Tons of Coal Purchased 1965

	Kavanaugh	Kannorin	Vermilion	Wood River	Total Tons	Total Dollars
Proctor Coal Mfg. Co.	-	-	215,331	116,940	332,271	1,539,568.02

United Elec. - (Banner)	66,608	-	-	66,608	338,358.48
United Elec. - (Buckhart)	101,883	-	-	101,883	504,320.85
United Elec. - (X. Moore)	-	22,675	-	22,675	105,453.75
V-Day Coal Co.	-	20,176	-	20,176	60,528.00
Total Tons Received	319,710	794,654	472,238	1,586,602	8,142,217.856.33

(\$1,489,848.60)

(\$3,990,698.60)

(\$2,227,223.41)

(\$6,510,085.72)

(\$14,217,856.33)

10-11-66

## WENNER'S POWER CO.

## Tons of Coal Purchased 1964

Havana	Hennepin	Vermilion	Wood River	Total Tons	Total Dollar:
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Wenner's Power Co.	-	33,608	115,177	148,785	660,468.93
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Wenner's Power Co.

United States Department of Justice

Room 3024 United States Building

Chicago, Illinois 60604

Wenner's Power Co.

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3  
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Electric	-	141,231	228,832	3,029	373,092	1,767,215.41
Water	-	-	8,789	-	8,789	26,367.00
Total Com. Received	360,581	781,576	485,784	942,818	2,370,759	\$11,981,610.96

(\$1,683,118.10)

(\$3,906,312.46)

(\$2,295,819.42)

(\$4,096,360.78)

(\$11,981,610.96)

I request that the U. S. Attorney General and the Office of the  
 the State Department have been a letter in connection to your  
 letter.

Very truly yours,

The State Department

Washington, D. C.

November 1, 1966

## CENTRAL ILLINOIS ELECTRIC AND GAS CO.

203 NORTH MAIN STREET  
ROCKFORD, ILLINOIS, 61101GOVERNMENT  
EXHIBIT

104

October 20, 1966

United States Department of Justice  
Room 2634, United States Courthouse  
Chicago, Illinois, 60604Attention: Mr. Donald F. Turner,  
Assistant Attorney General

Dear Mr. Turner:

This is in reply to your letter of October 14, 1966, in which you ask a series of questions relative to our coal purchases:

1. The names of the firms which supplied us with coal during the years 1964 and 1965 are the Old Ben Coal Corporation, 10 South Riverside Plaza, Chicago; Republic Coal & Coke Co., 8 South Michigan Avenue, Chicago; Truax-Traer Coal Company, Division of Consolidation Coal Company, 524 Commercial National Bank Building, Peoria, Illinois; The United Electric Coal Companies, 307 North Michigan Avenue, Chicago; and Peabody Coal Company, 122 West Washington Avenue, Madison, Wisconsin.

2. The amount of coal in dollars and tonnage is as follows:

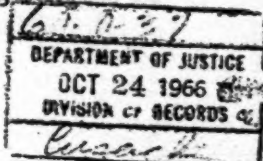
1964

Tons      Dollars

United	<u>51,688</u>	<u>189,520</u>
	212,095	\$798,263

1965

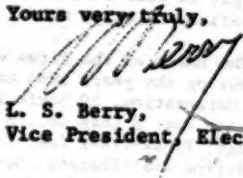
United	<u>38,804</u>	<u>143,692</u>
	217,715	\$835,505



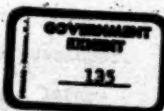
3. During the years 1964 and 1965, the coal purchased from Republic was mined in Indiana. All other coal was mined in the state of Illinois.
4. Our present contracts with the abovementioned coal companies were entered into in 1961 for a period of five years. Our records do not show whether Freeman Coal entered a bid at that time. We are at present inviting bids from the abovementioned companies and others, including Freeman, for our future coal supplies. At the present time we have had no formal bid from either United or Freeman.
5. We do not feel that the elimination of United Electric as an independent coal supplier would in any way affect our operation.

I trust that I have answered these questions to your satisfaction.

Yours very truly,

  
L. S. Berry,  
Vice President, Electric Oper.

STATE OF ILLINOIS  
ILLINOIS COMMERCE COMMISSION



Commonwealth Edison Company  
Application for authority to cause  
to be formed and to invest in a  
subsidiary corporation to conduct  
certain activities ancillary to its  
public utility business.

No.

P E T I T I O N

To the ILLINOIS COMMERCE COMMISSION:

COMMONWEALTH EDISON COMPANY (hereinafter called "Edison")  
respectfully says:

1. Edison is an Illinois corporation, with its principal office at One First National Plaza, Chicago, Illinois. It is engaged in the business of supplying electricity to the public in such city and in the northern part of the State of Illinois, and is a public utility subject to the jurisdiction of this Commission.

2. In the course of its electric public utility business, Edison purchases and installs large generating units, the usefulness of which and the cost of energy from which depend on the availability and price of fuel, principally coal and nuclear fuel. Edison is required to and does purchase large quantities of such fuels and is required to and does make forward commitments for the purchase of such fuels for supply to its generating stations.

3. Fossil fuel procurement has become increasingly difficult. The growth of nuclear power has had the effect of making coal mine operators reluctant to open new coal mines in and near Edison's service territory. Restrictions on the use of coal with sulfur contents characteristic of the major reserves in the areas in or near Edison's service territory have had a similar effect. In addition, large quantities of coal reserves in such areas are being acquired by petrochemical and other companies which have potential uses for such reserves other than their exploitation for fuels for electric generating stations.



4. While there is no similar short-run problem in the acquisition of yellowcake, which contains the natural uranium required as the raw material for nuclear fuel, the extent of uranium reserves is uncertain. Indeed, the Atomic Energy Commission has indicated that the reserves recoverable at \$8.00 per pound of yellowcake (a price somewhat above the current market) are sufficient to satisfy the demands for such fuel only through about 1979. Edison has purchased sufficient yellowcake, for future delivery, to meet its nuclear fuel requirements through 1975, but now has under consideration the construction of additional nuclear units for which additional supplies of uranium must be arranged.

5. Edison was one of the first companies to enter the field of electric generation with nuclear power. Its Dresden Unit 1, which went into service in 1960, was the first large-scale entirely privately financed nuclear power plant. It has now operated successfully for ten years. Edison has also contracted for more nuclear capacity than any other investor-owned utility. Its 809,000 kilowatt Dresden Unit 2 is now in preparation for commercial operation, which is expected to begin before the summer of 1970. At that time, it will be the largest nuclear unit in commercial service in the United States. Dresden Unit 2 will be followed by Dresden Unit 3 and Quad-Cities Units 1 and 2, each with a capability of 809,000 kilowatts, and Zion Units 1 and 2, each with a capability of 1,100,000 kilowatts. Through extensive experience with the operation of Dresden 1 and its procurement activities for the subsequent units, Edison has developed specialized technological capabilities in the procurement and management of nuclear fuels.

6. A critical factor in the operation of nuclear plants is computer technology. Without highly developed computer skills, it is impossible to operate a nuclear plant; the utilization of such skills has an important effect on the efficiency of fuel management and, consequently, on the cost of power from nuclear

units. Edison's skills in the computer area are highly developed. It was the first utility in the United States to employ a large-scale electronic computer for its billing and for mass accounting operations, and has extended its computer applications to the solution of complex engineering problems in other areas of its business. By reason of its present extensive commitment to nuclear power, it has applied these skills to the problems of nuclear fuel management. A subsidiary to provide computer services both to Edison and to others, primarily utilities, would reinforce Edison's own capabilities and be of advantage to other utilities.

7. A large number of electric utility companies have committed to and over the next several years are expected to commit to the installation of nuclear power plants. In many cases, these companies will not have developed within their own staffs either sufficient skilled specialists or sufficient experience for the most effective management of nuclear enterprises or the application of computers thereto. Many of such companies will be installing their first nuclear units and, since nuclear units are economic only if very large, may operate only a single nuclear unit or a relatively small number for several years. Edison believes that by making available to such companies the advantages of its experience and background in nuclear fuel procurement, nuclear fuel technology and computer applications, it can benefit them while improving at the same time the security of its own fuel supply, its ability to purchase nuclear fuels advantageously, and the utilization of fuel in its own reactors.

8. Accordingly, Edison proposes to establish a subsidiary for the purposes, ancillary to its electric utility business, of:

- (a) the acquisition and development of fuel reserves, both nuclear and fossil, capable of providing economical and reliable supplies of fuel for electric generation, the output

from such reserves to be made available to others when consistent with Edison's own requirements, and the conduct of such other fuel supply activities as may be reasonably related thereto;

(b) provision to itself and others of nuclear fuel management services and computer services.

Edison, therefore, requests the consent, authority and approval of this Commission to and for the formation of a subsidiary, all of the capital stock of which would be owned by Edison, and for the investment in such capital stock, without further order of the Commission, of up to \$10,000,000.

9. In connection with the establishment of such subsidiary, Edison would propose to transfer thereto, at its cost, certain contractual rights to land with associated coal reserves, the nature and extent of which will be described in the testimony herein. These reserves, however, will not be developed until satisfactory means become available for limiting the sulfur by-products in the stack effluents produced by burning coal of the character contained in the reserves. Since no such means are now available, the subsidiary will initially simply hold and manage such land rights and land acquired for coal reserves without development for coal mining.

10. Also, in the initial stages of the organization and operation of the subsidiary, certain administrative, accounting and other services to the subsidiary will be provided by Edison at the cost to Edison of such services. Such costs to be incurred by Edison and reimbursed by the subsidiary will be limited to \$100,000 until further application to the Commission for approval of the terms of any arrangements between Edison and the subsidiary.

11. Transactions other than those transactions above described between Edison and its affiliated interest, the proposed subsidiary, will be presented to the Commission for approval at such times and in the manner required by law.

12. Edison proposes to record its investment in the subsidiary and any profits or losses resulting therefrom in accordance with the Commission's Uniform System of Accounts for public utilities.

WHEREFORE, Edison requests consent, authority and approval of the Commission to form a subsidiary and invest therein as set forth in paragraph (8) above and to engage in transactions with such subsidiary as set forth in paragraphs (9) and (10) above.

Dated this 26th day of March, 1970.

COMMONWEALTH EDISON COMPANY

By /s/ R. J. Schultz

Isam, Lincoln & Beale  
Isam, Lincoln & Beale  
One First National Plaza  
Chicago, Illinois 60670  
786-7500  
Attorney for Petitioner

STATE OF ILLINOIS

COUNTY OF COOK

SS.

I, R. J. Schultz, first being duly sworn upon oath, depose and say that I am a Vice-President of COMMONWEALTH EDISON COMPANY, an Illinois corporation; that I have read the above and foregoing petition by me subscribed and know the contents thereof; that said contents are true in substance and in fact, except as to those matters stated upon information and belief, and as to those, I believe the same to be true.

R. J. Schultz

Subscribed and sworn to before me this 26th day of Mar-h 1970.

\_\_\_\_\_  
Notary Public



## GOVERNMENT EXHIBIT 200

## THE UNITED ELECTRIC COAL COMPANIES

## Special Meeting of the Board of Directors

October 9, 1959

Mr. Morris commented briefly on sales prospects stating that he expects Commonwealth Edison to take additional 350,000 tons per year starting January 1, 1960, and at the same time Central Illinois Light expects to increase purchases by 150,000 tons per year, and Central Illinois Public Service by 100,000 tons per year, a total increase of 600,000 tons per year not including any sales to be made from Banner Mine which will go largely for lake delivery. More storage areas for natural gas are being found and gas companies will also restrict pumping from the well head in order to take advantage of domestic and commercial rates.

No further business appearing, on motion duly made by Mr. Morris, and duly seconded by Mr. Jessopp, the meeting was adjourned.

/s/ G. H. Utterback  
Secretary

Will you comment on the production of Illinois in 1958? Illinois in 1958 produced 54,544,554 tons of coal, or about 12 percent of the national total. Exhibit 29 is a map showing the area of Illinois underlain by coal-bearing rocks and locations of mines that were active in December 1958. Exhibit 30 indicates annual coal production in Illinois since 1945, and the steady increase in production during the past 10 years. The 1958 production of coal in Illinois was the largest annual production since 1948, according to data reported by the Illinois Department of Mines and Geology.

## GOVERNMENT EXHIBIT 201

THE UNITED ELECTRIC COAL COMPANIES  
DIRECTORS' MEETING

May 13, 1960

The Chairman brought up for discussion the Company's ownership in McDonough and Schuyler Counties. At July 31, 1959 the Company owned or had contracts to purchase 2,529.10 acres of coal containing an estimated 8,976,117 tons and as of this date these figures have been increased to 3,339 acres of coal containing 11,530,000 tons. Inasmuch as the development of this field is probably some ten years in the future, it was decided not to pursue an aggressive purchasing policy in that area, but only to acquire acreage which might become available at not to exceed normal farm land prices in this area.

## GOVERNMENT EXHIBIT 210

Information Testimony for  
Illinois Commerce Commission Docket #55321Comments on Fuel Resources and Pollution  
in the Power Generation Industry

By Jack A. Simon

2/24/1970

Table 1

Reported Uses of Coal Received by Consumers in Illinois

1944 and 1968

(Thousands of Tons)

Use	1944	1968	% Change
Electric utilities	10,242	28,221	+175.5
Coke and gas plants	4,198	3,069	- 26.9
Retail	14,595	3,312	- 77.3
Other <sup>1</sup>	12,941	8,863	- 31.5
Total	41,976	43,465	+ 3.5

<sup>1</sup> Includes general industrial, railroad, and miscellaneous uses.  
Source: U. S. Bureau of Mines Coal Distribution Reports.

Q. Will you comment on coal production in Illinois?

A. Illinois in 1969 produced 64,832,584 tons of coal, or about 12 percent of the national total. Exhibit 3a is a map showing the area of Illinois underlain by coal-bearing rocks and locations of mines that were active in December 1969. Exhibit 4a indicates annual coal production in Illinois since 1948, and the steady increase in production during the past 10 years. The 1969 production of coal in Illinois was the largest annual production since 1948, according to data reported by the Illinois Department of Mines and Minerals.

Exhibits 4a, 5a, 6a, 7a, 8a, and 9a present statistical data on Illinois coal and certain relationships to national statistics.

Q. Is any part of the Illinois coal with relatively low-sulfur content used for generating electric energy?

A. Yes, although I do not have data on quantity and quality of coal shipments from the mines to specific markets. From the principal low-sulfur coal areas, premium coal for blending for use in metallurgical coke production is now produced at an annual rate of about 4 million tons per year. This coal is prepared from naturally occurring low-sulfur coal, and if some of the coal produced does not meet standards for metallurgical coke production, primarily because of higher ash and sulfur content, it is sold in other markets. This less-than-premium-quality coal is, of course, still relatively low in sulfur content compared with most Illinois coal produced.

A steadily increasing use of Illinois coal in blends to produce metallurgical coke in recent years is one of the reasons for the extensive development of mining activity in the low-sulfur coal area in Franklin and Jefferson Counties, and, on a more modest scale, for some expansion of activity in the relatively low-sulfur coal area in Saline County.

Q. Are there techniques of coal desulfurization other than washing?

A. Yes. The coal can be converted to other fuels with by-product recovery of sulfur. Of greatest long-term interest is the possibility of producing liquid and gaseous fuels from coal. Development of technology to accomplish this conversion is well advanced and pilot-scale plants are now in operation, although no commercial plants have been announced.

A report by H. E. Risser, entitled "Gasification and Liquefaction—Their Potential Impact on Various Aspects of the Coal Industry," was published by the Illinois State Geological Survey as Circular 430

(1968) and is presented as Exhibit 21a. Pertinent information on future projections for coal are present in Exhibit 22a, a report published by the Illinois State Geological Survey as Circular 310 and entitled "Coal in the Future Energy Market," by H. E. Risser (1960).

. . . .

Residence: Civil Service Manager

Civil Service Director

Monthly News Bulletin Service

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# 1967 KEYSTONE COAL BUYERS MANUAL

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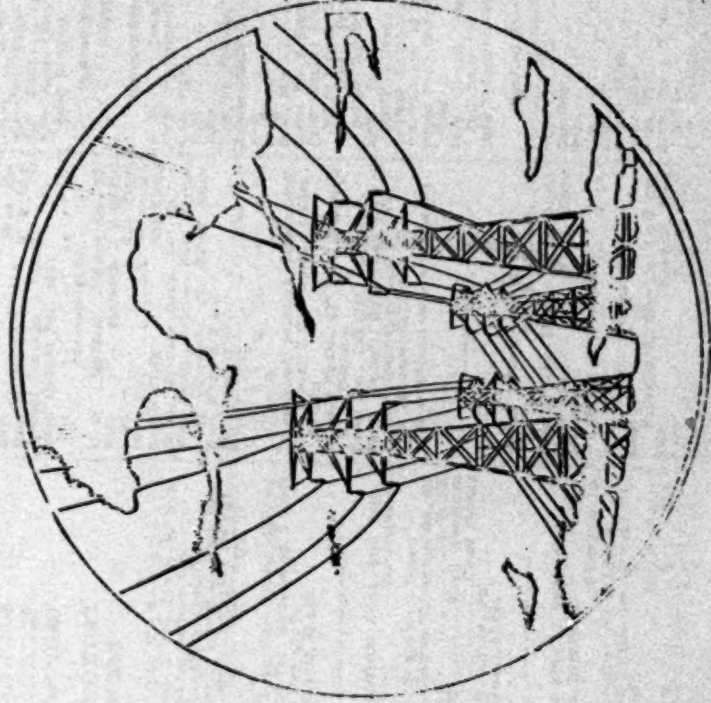
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Banner Seam, Peoria County, Illinois

### **CUEA-BUCKHEART**

Heavy media, washed and heat dried coals.

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### **FIDELITY**

Washed and heat dried coals.

Perry County, Illinois, No. 6 Seam.

**THE UNITED ELECTRIC COAL COMPANIES**

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<p>Major Use Values: Grills; Indus- try; Gen.; Dom. Trade Name: Orient Size Washed: 3 1/4" x 0 Min. Equip.: 0 to 3% Mfr. Equip.: 0 to 3% Coal Drill: Lonsell Haulage Equip.: 6 Cars Pulv.: 250 D.C. 440 A.C. Daily Cap. 10,000 T.; 3 shifts 1946 Tonnage: 1,541,997 For additional data, see pages 49, 423</p>	<p><b>HARRISBURG COAL CO., INC.</b> Marion, Ill. Sales Agents, Southern Illinois Co-op Coal Sales Co.</p>	<p><b>HARRISBURG MINE</b> Loc. .... Williams Co., Ill. Ship ..... Strip: No. 6 Seam; 107' Th. Prod. Equip.: Dyer Life Washer Employees 25</p>	<p><b>HAZEL DELL COAL CO.</b> New Windsor, Ill. Loc. .... Hazel Dell Mine Ship ..... Strip: No. 1 Seam; 84' Employees 19 1946 Tonnage: 23,688</p>	<p><b>LIBERTY COAL CO.</b> Orchard, Ill. Pres. .... Sales Agents, Southern Illinois Co-op Coal Sales Co.</p>	<p><b>LIBERTY MINE</b> Liberty P.O. .... Ship ..... Strip: No. 6 Seam; 108' Th. Bunk. .... Trade Name: Liberty Major Use Values: Industry &amp; Ele- tric Cons. Size Washed: 1 1/4" x 0 Min. Equip.: 1 Lg. Shvl., 8 Bl- ders, 100 Drills Haulage Equip.: Conveyor, 10 Trucks Pulv.: 100 Prod. Leased: Life Expect. 2 Yrs.; Employees 30; 1 Shift; Daily Cap. 1,400 T. 1946 Tonnage: 300,000</p>	<p><b>LITTLE BIG COAL CO.</b> 124 Railway Exchange Bldg., 111 Olive St., St. Louis Mo. 5101 Pres. .... Sales Agents, Southern Illinois Co-op Coal Sales Co.</p>	<p><b>LITTLE DOG MINE</b> Loc. .... Ship ..... Strip: No. 6 Seam; 107' Th. Bunk. .... Trade Name: Liberty Major Use Values: Industry &amp; Ele- tric Cons. Size Washed: 1 1/4" x 0 Min. Equip.: 1 Lg. Shvl., 8 Bl- ders, 100 Drills Haulage Equip.: Conveyor, 10 Trucks Pulv.: 100 Prod. Leased: Life Expect. 2 Yrs.; Employees 30; 1 Shift; Daily Cap. 1,400 T. 1946 Tonnage: 300,000</p>	<p><b>LITTLE SISTER COAL CORP.</b> (See Consolidation Coal Co., Trust-Trear Coal Co., Div.) Loc. .... Ship ..... Strip: No. 6 Seam; 107' Th. Bunk. .... Trade Name: Liberty Major Use Values: Industry &amp; Ele- tric Cons. Size Washed: 1 1/4" x 0 Min. Equip.: 1 Lg. Shvl., 8 Bl- ders, 100 Drills Haulage Equip.: Conveyor, 10 Trucks Pulv.: 100 Prod. Leased: Life Expect. 2 Yrs.; Employees 30; 1 Shift; Daily Cap. 1,400 T. 1946 Tonnage: 300,000</p>	<p><b>MAINE COAL CO.</b> Dedota, Ill. Pres. ....</p>
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# DIRECTORY OF MINES

Perman — Joe Elrod  
 Mines Supplying Raw Coal: Sahara  
 Nos. 5, 6 & 10  
 Designer of Plant: McNally-Pitts-  
 burg Mfg. Co. & Roberts & Schae-  
 fer, Inc.  
 Equip.: Rotary breaker; Baum  
 hammer; Oil Dust, Treat.; Crush-  
 ing; Conveying; Air Separ.; Ldg.  
 Bin; Vibr. Dg.; Hot Air Drying  
 Press; Prof. Disintegr. bl.  
 Daily Cap. (Cleaned Coaling shifts)  
 10,000 T  
 Stages Washed: 1" x 0  
 Stages Dried: 1 1/2" x 20M & Intern.  
 Stages Dried: 1" x 20M & Intern.  
 Trade Name: Sahara

Gross shipped: 7 x 4; 4 x 4; 2 x 3; 2  
x 1 1/2; 1 1/2 x 1 1/2; 1 1/2 x 1 1/2; 1 1/2 x 1 1/2;  
1 1/2 x 2 1/2; 1 1/2 x 3; 1 1/2 x 4; 1 1/2 x 6;  
1 1/2 x 8; 1 1/2 x 10; 1 1/2 x 12; 1 1/2 x 14;  
1 1/2 x 16; 1 1/2 x 18; 1 1/2 x 20; 1 1/2 x 22;  
1 1/2 x 24; 1 1/2 x 26; 1 1/2 x 28; 1 1/2 x 30;  
1 1/2 x 32; 1 1/2 x 34; 1 1/2 x 36; 1 1/2 x 38;  
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1 1/2 x 640; 1 1/2 x 642; 1 1/2 x 644; 1 1/2 x 646;  
1 1/2 x 648; 1 1/2 x 650; 1 1/2 x 652; 1 1/2 x 654;  
1 1/2 x 656; 1 1/2 x 658; 1 1/2 x 660; 1 1/2 x 662;  
1

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160 A.C. Triple 440 A.C.  
op. Owned Life Expt. 30 Yrs.  
Employees 183; 1 shift; 5,000-5,500  
T. daily.  
Sahara No. 1,324,185

Males. Equil.: Cutline Machs.; Mbl.  
 Lvs.: Coal. Drills; Fert. Neck  
 Tapered; Equil.: Equil. 43"  
 Equil.: Equil.; Bath Conveys; 43"  
 T.G. Shuttle Car  
 Power Pwr 1500 KVA.; D.V. Mine  
 375 D.C.; Table 440 A.C.  
 Frsp. Owned: Life Expec. 25 Yrs.;  
 4,000 T. daily  
 1066 Tonnage, L.014.182  
 For additional data, see page 435

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SOUTHWESTERN ILLINOIS  
 COAL CORP.  
 1814 Merchants Bank Bldg.,  
 Indianapolis, Ind.  
 Chester Jackson  
 T. C. McIlhenny, Jr.,  
 303 N. Dearborn St.,  
 St. Louis, Mo.  
 Sec. Treas. & Gen. Mgr.

[illegible]

For additional data, see page 417

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distinguished for their basic character and  
excellent preparation for electric utility, industrial,  
metallurgical and heating uses



### ORIENT NO. 3

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Shipping point Orient Mine No. 3, Illinois. Daily capacity 14,000 tons. One of the largest mines in the country. Famed for quality and excellence of preparation. The lowest ash low sulphur coal in Illinois for metallurgical, electric utility, industrial and heating applications. Extensive reserves.

### ORIENT NO. 4

WILLIAMSON COUNTY, SOUTHERN ILLINOIS



Shipping point Orient Mine No. 4, Illinois. Daily capacity 7,000 tons. A special feature of this mine is its attractive glossy-black, firm structure coal, unusually low in moisture and high in Btu content. A popular dealer coal as well as a long-time favorite with utilities and industries.

### ORIENT NO. 5

FRANKLIN COUNTY, SOUTHERN ILLINOIS



Shipping point West Frankfort, Illinois. Daily capacity 7,000 tons. Freeman's newest mine, highly automated for unusually precise control of both quality and sizing. Orient No. 5 coal is a low moisture, high Btu product, highly desirable for utility, industrial and heating uses.

### CROWN MINE

MONTGOMERY COUNTY, CENTRAL ILLINOIS



Shipping point Crown, Illinois. Daily capacity 10,000 tons. The largest air-cleaning plant in the country plus unusually versatile preparation facilities capable of meeting varied market requirements. Crown coal is widely used by utilities and industries, and also has a large and loyal dealer following.

*Distributors of Choice High and Low Volatile Coals from Eastern Kentucky and West Virginia*

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## GOVERNMENT EXHIBIT 232

## THE ENERGY OUTLOOK

*Although U.S. energy consumption patterns have remained virtually unchanged since World War II, two factors—increased competition among conventional fuels and greater public concern over the environment—have created doubts about the indefinite continuation of established trends*

*Abraham Gerber, Bruce C. Netschert*

*National Economic Research Associates, Inc.*

In addition to reporting on prevailing trends in U.S. energy production and consumption, this article makes a number of statements concerning the outlook for the future. For example, the growth of underground distribution and control over the sulfur content of fuels and stack emissions may possibly halt or reverse the long-term downtrend in the cost of electricity. Although nuclear power is beginning to emerge as a competitor of fossil fuels, it is still too early to predict its eventual impact on the overall picture.

Developments in energy consumption in the United States during the 1960s have continued the trends established in the period since World War II. At the same time, however, new uncertainties have arisen that shed doubt on the further continuation of established trends for many of the individual energy commodities. The first of these uncertainties is the intensified competition among the conventional fuels and between the fuels and electricity, arising from a growing intersubstitutability among all forms of energy. The long-distance pipeline, which in previous years primarily affected competition in space heating and industrial use by making natural gas available throughout the U.S., is now bringing gas into direct competition with electricity through on-site generation of power from gas and the use of the waste heat for all heating-

I. U.S. energy consumption by consuming sector, 1961-1966, 10<sup>12</sup> kilogram calories

Year	Household and Commercial	Industrial	Transportation	Electricity Generation	Miscellaneous and Unaccounted For	Total Gross Economy Input
1961	2625	3753	2769	2138	199	11,484
1962	2771	3890	2877	2282	180	12,000
1963	2787	4089	3015	2435	186	12,512
1964	2810	4281	3089	2610	192	12,982
1965	2972	4414	3206	2800	164	13,555
1966	3154	4515	3326	3040	134	14,163
Average annual rate of increase:						4.3%
	3.7%	3.8%	3.7%	7.3%	—	

Source: U.S. Department of the Interior, Bureau of Mines, *Minerals Yearbook*.



cooling needs. Simultaneously, the continuation of long-established trends of declining electricity costs and rising incomes has stimulated the invasion of electricity into a spaceheating market. Moreover, the long-heralded threat of nuclear power to the position of the conventional fuels, especially coal, has finally become a reality in the power fuel market.

The second uncertainty arose through the recent rapid development of public concern over environmental degradation, especially air pollution. This concern has taken the form of restrictions on the sulfur content of fuels and stack gases, and of governmental interest in the possibility of the electric automobile as a substitute for the conventional gasoline-powered vehicle. Although the effect of this development has thus far weighed most heavily on coal and oil, it is still too early to foresee the ultimate course of events.

## II. U.S. consumption of crude petroleum, natural gas, and electric energy, 1961-1966

	Crude Petroleum, 10 <sup>3</sup> tonnes	Natural Gas, 10 <sup>6</sup> cubic meters	Electric Energy,* 10 <sup>6</sup> kWh
1961	399,792	368,423	808,200
1962	410,651	391,190	868,917
1963	424,004	412,323	926,757
1964	431,086	437,554	994,360
1965	441,376	454,012	1,059,444
1966	460,904	486,818	1,146,693

Average annual rate of increase:

2.9%

5.7%

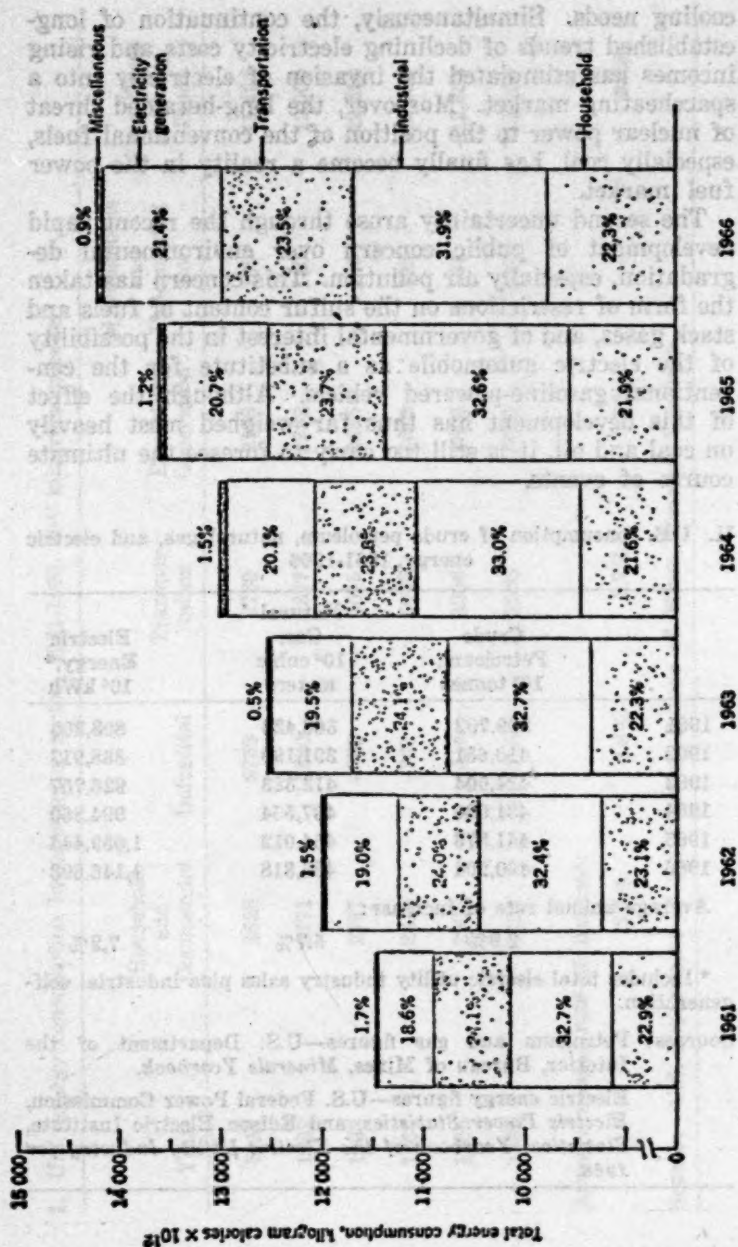
7.2%

\* Includes total electric utility industry sales plus industrial self-generation.

Sources: Petroleum and gas figures—U.S. Department of the Interior, Bureau of Mines, *Minerals Yearbook*.

Electric energy figures—U.S. Federal Power Commission, *Electric Power Statistics*, and Edison Electric Institute, *Statistical Yearbook of the Electric Utility Industry for 1966*.

FIGURE 1. Energy consumption in the United States by consuming sector.



Another important area of interest has to do with the thermal pollution effects of cooling-water discharge from large power plants, especially nuclear plants, in local bodies of water. Growing concern over the thermal effects on stream ecology is beginning to play an increasingly important part in the location, design, and cost of power plant construction.

Another environmental factor that is also affecting electric power is the growing public opposition to the construction of overhead distribution and transmission lines on the grounds that they mar the esthetic beauty of the landscape. This has caused costly delays and re-routing of transmission lines. In distribution, where the technology is presently available, lines are increasingly being located underground, usually at a somewhat higher cost.

#### *Recent and future growth rates*

Total energy consumption in the United States grew at an average rate of 4.3 percent per year in the period 1961-1966 (see Table I and Fig. 1). Energy consumption for uses other than electricity generation grew at a rate of 3.6 percent. The rate of growth in the consumption of fuels for electricity generation was 7.3 percent, which was equivalent to the growth in electricity consumption itself (see Table II). Thus the use of fuels in power generation lifted the growth rate for total fuel use above that of direct fuel use alone. The growth in fuel consumption for electricity generation was little affected by the moderate improvement in average thermal efficiency at central stations from 31.7 to 32.6 percent, or an average increase of 0.19 percentage point over the period 1960-1965. (The 1966 figure was not available at the time of writing.)

In the latest five-year period the improvement in the average heat rate has slowed down considerably as compared with the overall trend since the end of World War II (an average increase of approximately 0.55 of a percentage point per year). There has been very little improvement in the best units during this period, and thermal efficiency in conventional fossil-fueled plants there-

fore appears to be nearing a plateau in the neighborhood of 40 percent. This slowing down in the rate of improvement in average thermal efficiency is likely to continue over the next ten years or so.

In the absence of the successful development of a new technology, such as magnetohydrodynamics, or the development of new materials that would make possible still further increases in temperatures and pressures employed, additional improvements in thermal efficiency are likely to be relatively minor in nature. The average, therefore, can be expected to decline only slowly as new fossil-fueled generating plants at today's highest thermal efficiencies are added to the existing plant population. Consequently, the growth in fuel requirements for electricity generation purposes will tend to grow in direct proportion to the growth in conventional fossil-fuel power generation. (Of course, it is anticipated that nuclear power plants will continue to operate at much lower thermal efficiencies than will the conventional power plants.)

The growth rates in energy consumption and electricity consumption shown in Tables I and II compare with an average growth of 5.6 percent per year in Gross National Product (measured in constant dollars) over the same period. Since total energy use grew at a slower rate than GNP and electricity use grew at a faster rate, the trends in energy-GNP relationships established in the years since World War II have continued: The total energy consumption per dollar of GNP continues to decline, whereas the consumption of electricity per dollar of GNP continues to increase.

These trends are the result of two fundamental economic features of long duration in the United States economy. One feature is the continuing shift in the structure of the economy, in which the governmental and service industry sectors are becoming ever-larger portions of total GNP. In 1966 these two sectors, which are not energy-intensive, accounted for almost one half the total. As a result, energy consumption per dollar of GNP has continued to decline. The other feature is the high income elasticity of the economy in relation to consump-

## III. U.S. energy consumption by energy source, 1961-1966

Year	Anthracite	Bituminous Coal and Lignite	Natural Gas, Dry	Petroleum and Natural Gas Liquids	Electricity		Total
					Hydro- power	Nuclear Power	
1961	0.9%	21.5%	29.0%	44.9%	3.6%	0.1%	100.0%
1962	0.8	21.3	29.4	44.7	3.7	0.1	100.0
1963	0.7	21.6	29.9	44.2	3.5	0.1	100.0
1964	0.7	21.9	30.2	43.5	3.6	0.1	100.0
1965	0.6	22.4	30.0	43.1	3.3	0.1	100.0
1966	0.5	22.5	30.0	43.3	3.6	0.1	100.0

Source: U.S. Department of the Interior, Bureau of Mines, *Minerals Yearbook*.



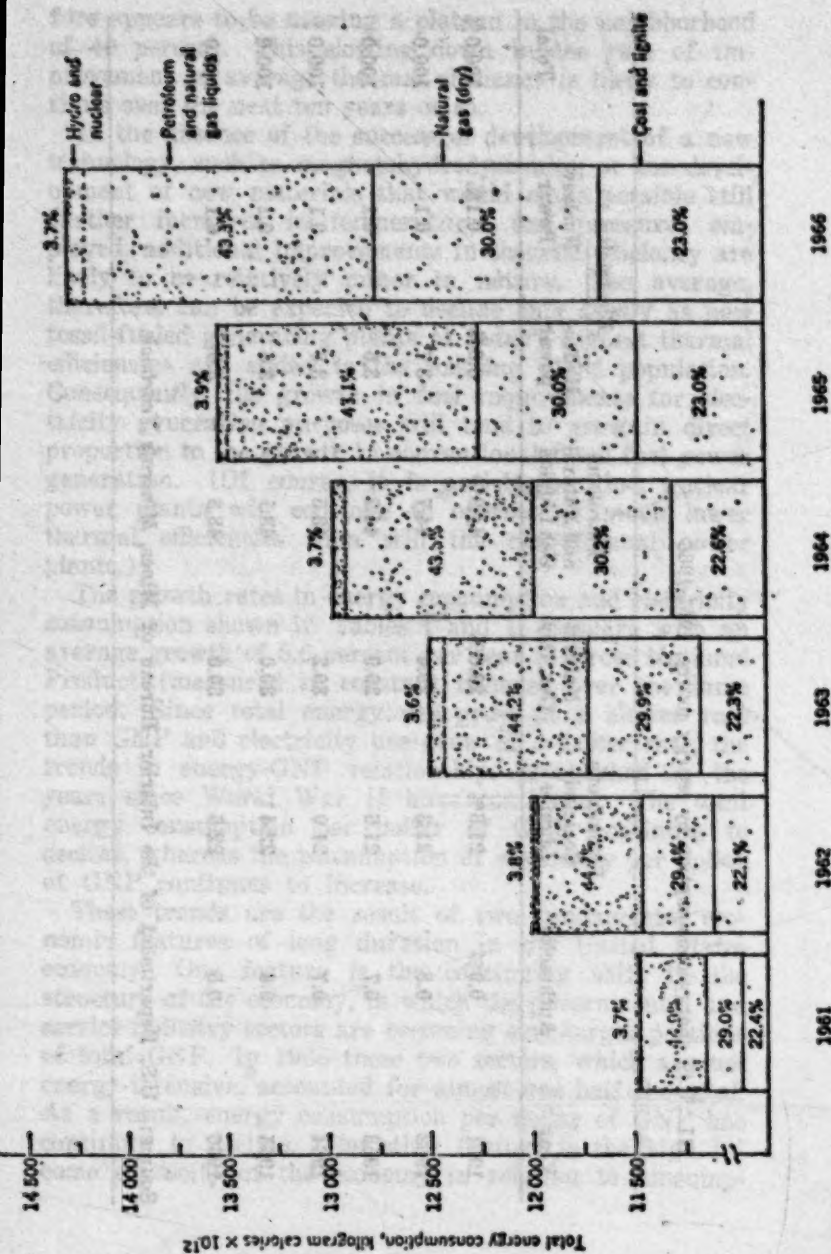


FIGURE 2. Energy consumption in the United States by energy source.

tion of energy in secondary and tertiary forms. As incomes rise there is a tendency to consume energy in a more processed or refined form of higher value. Therefore, as the United States energy economy has become less energy-intensive it has at the same time become more electricity-intensive.

There is nothing on the horizon at the present time to indicate any change in these general relationships. In its latest energy forecast, the U.S. Bureau of Mines expects the annual growth rate in the consumption of each of the fossil fuels to average 3.1 percent through 1980. Overall energy consumption is forecast to grow at a 3.3 percent rate and electricity consumption (excluding self-generated industrial electricity) at 6.5 percent. Thus growth in electricity is projected to be at roughly double the rate of growth in the fuels. GNP growth is assumed to be 3.9 percent.<sup>1</sup> All of these rates are lower than the experience of the 1960-1965 period; however, their relative positions remain essentially unchanged.

As shown in Table III and Fig. 2, the composition of the energy input pattern has changed very slightly in the past five years. It is significant, however, that coal shows a small but definite uptrend, and petroleum, conversely, a downtrend as a proportion of the total. Given the continuing more rapid growth in electricity production than in total energy consumption, these trends should continue. It is evident that the growth of coal would be greater were it not for the development of nuclear power.

Whether or not the competition of nuclear fuel with coal will be sufficient to hold the growth rate in coal at the same level as that of the other fossil fuels, as the Bureau of Mines projects, is a question that must remain unanswered at present, since the answer depends on the experience with the new generation of nuclear plants now being constructed.

Although nuclear plants in the past two years have constituted roughly half of the capacity ordered by the U.S. power industry, there has been almost no operating experience with the large-size units that have been or-

dered. To date, experience has been confined to 200-MW units at Yankee Atomic and Dresden I and the 400-MW San Onofre unit, which began operation in the summer of 1967. The operating performance of the 600-, 800-, and 1100-MW units now under construction, which represent major extrapolations of the size of presently operating units, remains to be determined. In any event, the large nuclear share of capacity on order may be a misleading indicator of the inroads of nuclear power and may not accurately reflect its present competitive position.

Inasmuch as the acceleration of nuclear orders has exerted severe pressures on the limited manufacturing capacity, the construction lead times have stretched out considerably. Nuclear orders on the books now include some capacity for installation with an eight-year lead time. In contrast, units for fossil-fueled capacity continue to be ordered some three to four years prior to the expected operating date. If the nuclear portion of capacity were to be measured on the basis of capacity to be installed as of a given date rather than on the basis of capacity on order, it would be lower. For example, since manufacturing capacity for 1973 deliveries is already fully booked, all additional orders for thermal generating capacity to be installed by 1973 will have to be for fossil-fueled units.

Moreover, the size extrapolations could result in technical difficulties, with consequent delays in bringing these plants into operation. This raises the possibility of "brownouts" or even "blackouts" in the early 1970s. Already the record of delays in nuclear plant construction to date has caused some concern in the industry and may lead to the ordering of additional fossil-fueled capacity for installation at that time in order to protect against the possibility of such delays in bringing the nuclear plants on line. Thus, although the long-term outlook—say, two decades and beyond—may favor nuclear development, for the shorter term the fossil fuels (especially coal) remain very much in competition, with the share to be won by each still to be determined by its competitive vigor.

Coal remains the most important fossil fuel for electricity generation in the United States. In 1966 it still fueled 65 percent of the thermal generation and 54 percent of total generation. Although total coal reserves of all types are estimated by the U.S. Bureau of Mines to be about  $1.5 \times 10^{12}$  tonnes, the availability of reserves suitably located in sufficient quantity may prove to be a problem in maintaining coal's relative position in electric generation. The size of electric generating units and plants is increasing and the size of units capable of competing economically with nuclear power is likely to be in the 800-MW range and larger, with plant sizes of 2500 to 3000 MW visualized. (Along with the move to these larger sizes there appears to be developing the first glimmerings of a trend of great potential significance—the procurement of generating equipment from foreign manufacturers by the investor-owned utilities in the United States. During 1967 several large utilities announced such purchases, which previously had been made almost entirely by publicly owned systems.) A 2500- to 3000-MW plant would require  $5.9$  to  $6.3 \times 10^6$  tonnes of coal per year, or a total of about  $180 \times 10^6$  tonnes for each plant during its lifetime. If coal is to be supplied to these plants economically through the exploitation of the economies of scale in mining and transportation, it will have to come from no more than two or three large blocks of reserves, strategically located with respect to the generating plants.

In the absence of such economies of scale an annual requirement of such large tonnages would be difficult to provide at price levels competitive with nuclear power. Thus, with few exceptions, supply of small tonnages from a large number of mines is economically impracticable; nor can long transportation distances and high costs be tolerated. Some 71 percent of the coal reserves of the United States lie west of the Mississippi River, yet, because of the transportation costs, these reserves cannot be considered for use in the area east of the Mississippi River, where the largest markets for power plant consumption are located. It will be difficult, therefore, to put together the large blocks of reserves needed for a

large-scale mining operation capable of providing economically the 6 to  $6.5 \times 10^6$  tonnes a year that would be required for a 3000-MW power plant. If this is not possible, coal will face the erosion of its markets by nuclear power.

The outlook for oil raises different problems. A report issued by the United States Department of the Interior in 1965<sup>2</sup> estimated that total consumption of liquid hydrocarbons (crude oil, lease condensate, and natural gas liquids) in the United States in 1980 would be at a level 26.7 percent greater than the consumption subsequently recorded in 1966. Since the petroleum industry, unlike the coal industry, must discover new reserves if such an increase is to be attained (or, indeed, even if present levels are merely to be sustained), the question naturally arises as to whether the requisite discoveries are likely to be made.

There is at present considerable controversy over this question. Although it is generally agreed that the required petroleum resources exist,<sup>3</sup> the industry contends that exploration for new reserves will be inadequate unless the price of crude oil rises. The situation is complicated by the already high cost of U.S. crude oil relative to oil produced elsewhere in the world. Under the Mandatory Oil Import Control Program instituted in 1959, imports of oil and oil products into the United States are subject to quota limitations and it is the stated policy of the U.S. Government that any significant increase in the price of domestic crude oil would occasion a review of the program.

(The quantity of oil and products imported in 1967 equaled approximately 21 percent of total domestic consumption. Under the quota system, imports other than residual oil are limited, on the East Coast, to 12.2 percent of consumption. In an attempt to stimulate the use of low-sulfur residual oil, the restrictions on its importation were greatly relaxed during 1967. Imports of

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<sup>3</sup> The U.S. Geological Survey has estimated that approximately  $200 \times 10^6$  tonnes of liquid hydrocarbons exist in nature within the borders of the United States and on the adjacent continental shelf. Of this amount,  $133 \times 10^6$  tonnes remain to be discovered.<sup>3</sup>



crude oil and petroleum products excluding residual oil averaged 18.6 percent in the period from 1961 to 1966. Residual oil is excluded from this comparison since it is not produced in response to domestic demand; hence, imports of it do not affect the demand for crude oil.)

The industry also points to the sharp drop in the number of wells drilled that has already occurred in the past several years as evidence of the fact that a price rise for crude oil is not only needed for the future but is already overdue. It has not been demonstrated, however, that this lower drilling activity is related to the price of crude oil rather than to such other causes as the level of demand, more prolific exploratory targets elsewhere in the world, the development of reserves through improved recovery techniques (see below), or the decision of individual companies to divert some funds temporarily to other uses.

The outlook for natural gas and the opinions concerning it are in many ways similar. An industry-sponsored committee has estimated that U.S. requirements for natural gas through 1990 will be as follows\*:

Year	Cubic Meters X 10 <sup>12</sup>
1975	0.722
1980	0.810
1985	0.906
1990	1.019

Another industry-sponsored committee\* has estimated that the potential supply of natural gas as of the end of 1966 was  $19.539 \times 10^{12}$  cubic meters, excluding proved reserves.\* This is approximately equal to the projected

\* The definition and coverage\* of the Potential Gas Committee's figure is wholly different from that of the U.S. Geological Survey's estimate of crude oil referred to previously. The Committee defines potential supply as "that prospective quantity of natural gas yet to be found and proved by test wells which can be expected to be drilled in the future under assumed conditions of adequate but reasonable prices and with normal improvements in technology . . . ." The Geological Survey figure, in contrast, refers to

cumulative requirements through 1990, but with the addition of present proved reserves the total supply becomes  $27.72 \times 10^{12}$  cubic meters. According to the estimates of the two committees, therefore, sufficient gas exists in nature to take care of U.S. consumption requirements through 1990, although serious supply deficiencies should begin to become apparent about that time. On the other hand, if the U.S. Geological Survey is correct, sufficient gas reserves exist to satisfy needs still further in the future, provided technology is equal to the task.

Nevertheless, as is true with respect to petroleum, there is controversy over whether sufficient discoveries will, in fact, be made, whatever the natural resource stock may be. Here, too, the industry argues—primarily in its presentation to the Federal Power Commission, which regulates natural gas † prices—that higher gas prices will be needed and, indeed, are already overdue. Again, well-drilling activity has declined in recent years. Although the Federal Power Commission has heard the industry arguments, it has not found them persuasive enough to take action.

#### *Recovery efficiency and low-grade-resource use*

The ability of the petroleum industry of the United States to maintain an increase in production in each of the past nine years (averaging 2.75 percent per year) has been increasingly the result of improvements in recovery efficiency. The most important contribution on this score has been secondary recovery, through the injection of water, natural gas, and other fluids and, to

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the quantity existing in nature, with no qualifications as to economic or technologic feasibility. The Geological Survey estimate for natural gas on the same basis is approximately  $104.6 \times 10^{12}$  cubic meters remaining in nature, of which  $95.6 \times 10^{12}$  cubic meters remain to be discovered.

† The Commission has regulatory powers only over gas produced in one state and sold for consumption in another. Gas produced and sold for consumption within the same state is unregulated; in recent years such gas has amounted to 40-45 percent of the total gas consumed.

some extent, through "thermal recovery," involving the injection of steam or the burning of a small fraction of the oil in place.

Between 1959 and 1965 secondary oil production as a percentage of total oil production (including lease condensate) increased from 22.0 to 32.4 percent. The U.S. Bureau of Mines projects a continuation of this increase at an annual rate of 0.5 percentage point, so that in 1980 secondary production is expected to account for 41 percent of total production. The recovery efficiency, currently estimated to be a little over 30 percent, is expected to reach 40 percent by 1987.\*

Recovery efficiency is also rising in coal mining. Although there are no direct data on the change, it can be inferred by changes in the proportion of coal produced by different methods. Surface mining, in which recovery may reach as high as 90 percent, continued its growth as a percentage of total coal mining in the period 1961-1966, rising from 30.3 to 33.7 percent. Auger mining, in which recovery is also greater, on the average, than in underground mining, rose from 2.0 to 2.9 percent in the same period. In addition, the progressive exhaustion of the coal seams, best-suited to the conventional room and pillar method of underground mining, has led to a small but growing application of longwall mining, with a consequent increase in recovery. In 1961 production by this method was only 24,000 tonnes. In 1966 it was over 2 million tonnes, 86 times greater.

There has also been improvement in the utilization of coal seams previously uneconomic to mine. The combination of surface and auger mining, for example, has had this effect, as has the increase in the depth to which surface mining methods can be extended. A new stripping machine, the largest yet built, can uncover economically coal seams 56.4 meters underground. Similar improvements have occurred in the ability to mine thinner seams: Continuous mining machines are now available for working seams only 6 meters thick.

The application of controlled nuclear explosions holds the promise of utilization of other hydrocarbon resources previously uneconomic to exploit. The first step in this

direction was the experimental detonation of a 26-kilotonne thermonuclear device at a depth of 1293 meters in the Pictured Cliffs formation in northwest New Mexico on December 10, 1967. The rock in which the explosion took place is known to contain natural gas, but its permeability is so low that production with conventional means is uneconomic. The purpose of the test was to see whether the results of the explosion will permit commercial recovery of the gas. It has been estimated that if the method of "nuclear fracturing" proves technically and economically feasible, its application throughout the western United States will create reserves of natural gas that are roughly double the present level.

Two other nuclear explosions in the planning stage involve the use of a 40-kilotonne and two 50-kilotonne devices in low-permeability gas formations in western Colorado. Still another project that will probably be carried through if the first test proves successful is a proposal to use underground nuclear explosions to recover oil from the oil shales of the Green River formation in Colorado, Wyoming, and Utah. Although shale oil recovery is already technically feasible through conventional methods of mining, crushing, and retorting the rock, continuing efforts over the past four or five decades have been unsuccessful in bringing down the cost of the product to a level competitive with crude oil. Success with nuclear explosions and drilling to produce the shale oil directly would make available a resource estimated to total several times the present world reserves of crude oil.

Uranium reserves in the U.S. at the present time are an uncertain quantity. The latest estimate of the U.S. Atomic Energy Commission is 181,000 tonnes of U<sub>3</sub>O<sub>8</sub> in proved reserves available at a price of up to \$22 per kilogram. This follows, however, a period of about a decade in which active exploration has been discouraged. The growth in nuclear orders in the past two years has stimulated an active exploration effort by the uranium mining industry, the results of which should become known over the next two to three years. It is reasonable to expect that the increased knowledge of uranium geol-

ogy gained in the past decade and the more systematic approach to uranium exploration compared with that carried out in the early 1950s will result in expanding known uranium reserves. In addition, improved recovery technology should make available reserves that at the present time are uneconomic.

*Problems in the future production and utilization of energy*

One of the outstanding phenomena in public attitudes and governmental policy in the United States during the past several years has been the rapid rise to prominence of concern with the environment. One of the most important subjects of this concern is air pollution, especially pollution by sulfur dioxide. Recent federal and local regulation and standards have imposed severe limitations in certain metropolitan areas on the allowable sulfur content of fuels under a series of progressive reductions applicable over the next few years. There is currently developing a trend toward the imposition of regulations prohibiting the use of fuel with more than 1 percent sulfur by weight in the metropolitan centers of the United States. At the same time, the technological justification of such a stringent standard is being increasingly questioned.

Although the new standards are being met in New York City, the first area for which they were adopted, it is as yet not at all clear how they can be met on a national scale. (Strictly speaking, Los Angeles was the first metropolitan area to set limitations on fuel use, but the emphasis was on the local smog problem rather than on sulfur dioxide as such.) The East Coast, which accounts for 66 percent of total national consumption of residual oil imports 84 percent of its needs. The Venezuelan product, which constitutes the bulk of the imports, is high in sulfur content. To date, the low-sulfur needs are being met by imports from other countries, but the supply of such oil, especially in the face of the growing concern over air pollution in other parts of the world, does not appear at this time to be adequate. One solu-



tion is to desulfurize high-sulfur oil, but there is a reluctance to commit the required large capital sums as long as it is not clear which of the many possible processes is the best. In any event, it is already evident that the use of low-sulfur oil will entail higher costs. For the initial conversion in the New York City area the increase is about one third.

There is also a problem with respect to coal. If coal used in power generation is limited to coal with 1 percent or less sulfur content, as seems likely, the usable U.S. coal reserves would be drastically reduced, since no economically satisfactory method for coal desulfurization as yet exists. Again, it is clear that the use of low-sulfur coal will entail higher costs regardless of the solution that is adopted.

One alternative that appears to provide at least an interim solution is the use of high stacks on power plants. The regulatory authorities in the United States are not yet convinced that high stacks capable of dissipating power-plant effluent into the atmosphere constitute a satisfactory solution. However, increasingly favorable experience with high stacks may improve their acceptability as a solution, at least temporarily.

An alternative that may solve the air-pollution problem for both coal and oil, at least for power stations, is the desulfurization of stack gases. But this, too, would certainly bring higher costs unless desulfurization technology were to permit the revenues from the recovered sulfur to exceed the cost of recovery. Further, it would require a change in the regulations pertaining to the sulfur content of fuels, for which the authorities have shown no enthusiasm to date; and there would remain the matter of high-sulfur fuel use by other consumers, for which stack gas desulfurization would not be applicable.

Another aspect of concern over the environment that has a bearing on the future production of coal is the tendency to impose more stringent regulation on strip mining, the most economic means for obtaining coal at the present time. The increasingly severe requirements for land restoration will tend to limit the extent to which

strip-mining technology can be exploited and, in any event, will tend to exert upward pressure on coal costs and prices.

Two other areas of concern with the environment are wholly power-industry problems. One is the matter of "thermal pollution." As station size passes the 1000-MW mark and as population growth and increasing urbanization make large station sites ever more difficult to find, the effect of such stations on the temperature of local bodies of water used for cooling purposes is becoming an important issue. It is no coincidence that cooling towers are beginning to appear in the United States, from which they have been absent heretofore. The first towers were built for plants located on small streams, but one is now under construction for a plant on the Ohio River, one of the largest streams in the country.

The problem of thermal pollution is especially severe for nuclear plants, which are, as yet, considerably less efficient than fossil-fueled plants. A nuclear plant converts about 25 percent less of the heat output into electric energy and, for an equal number of kilowatthours, discharges about 50 percent more heat into the cooling water than does a fossil-fueled plant. This has already created some difficulties in obtaining construction permits for nuclear plants, and in one instance has necessitated the use of cooling towers.

The second area is the effect of transmission and distribution lines on the appearance of the environment. Local authorities are putting increasing pressure on the power industry to install new distribution lines underground and in some instances to convert existing overhead lines to underground. There is pressure as well from both local and state authorities to put transmission lines underground and there is increasing difficulty in obtaining rights of way for the overhead lines.

The matter of underground distribution is not a severe technical problem for the power industry, but underground transmission is. Here public pressure is mounting, even though the technology does not yet exist. Nevertheless, under the circumstances, the necessary technology can be expected to develop, even though no one

can foresee its nature at this time. Meanwhile, the use of higher voltages (up to 765kV) is being adopted in order to provide a greater total capacity over a given right of way.

The significance of all these pressures on the power industry as a result of concern with the environment is that they threaten to halt or even reverse the previous continuous progress in reducing costs. Action to comply with each of the foregoing public desires will probably bring with it increased costs. Initially, as is true of low-sulfur fuel, the increase can be substantial. In the light of the present state of knowledge the installation of underground transmission will likely dwarf the other increases. It is probable that as technology catches up on each of these fronts the additional cost may be lessened, but there are no grounds, at least at present, for expecting or even hoping that the net result a decade or two from now will be lower delivered power costs than at present. For the power industry this prospect is especially ominous, as it comes at the very time when it faces greater competition from the fuels in a growing range of applications.

Although the total energy resources remain abundant, the energy markets in the United States are now subject to severe turbulence, as competition among all the energy sources to maintain or increase their market share continues to grow in intensity. The result, for the next decade at least, is likely to be continued availability of adequate total energy supply at close to present real cost.

### *Summary*

Prevailing trends in energy consumption in the United States established in earlier years continued in the period from 1961 to 1966 and are likely to continue for the indefinite future. Developments during the period, however, suggest that trends in the level of consumption of the various individual sources and forms of energy are likely to change in the coming decade or two. Nuclear power began to emerge as a full-fledged competitor of the fossil fuels in power generation, but it is not yet pos-

sible to assess its likely impact on the consumption of fossil fuels in the next two decades. Similarly, the impact of measures to abate air pollution on energy consumption patterns in the near-term future cannot yet be foreseen. It is possible that control over the sulfur content of fuels and stack emissions, together with the movement to install power distribution facilities underground and limitations on the allowable thermal effect of central station condenser cooling on bodies of water, may halt or reverse the long-term downtrend in the cost of electricity.

Improvements continued in the efficiency of recovery of both petroleum and coal. The underground explosion of a nuclear bomb in 1967, conducted as an experiment to increase the recovery of natural gas in rock from which commercial production is now impossible, offered the promise of creating large additional natural-gas reserves in this manner and of making possible the commercial use of oil shale resources as well. Whether or not such efforts succeed, the outlook in the United States is for continued availability, for at least the next decade, of adequate supplies of energy in its various sources and forms without any appreciable increase in cost other than inflation.

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## GOVERNMENT EXHIBIT 233

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THE FUTURE ROLE OF FOSSIL FUELS IN  
ELECTRIC POWER GENERATION

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The tremendous growth in energy demand in the United States, to meet the requirements of an ever-expanding economy, is highlighted by a phenomenally increasing demand for electric power. While total energy increased by 58 percent between 1950 and 1965, consumption of energy resources for electric power generation increased by 131 percent.

Preponderantly, the root sources of energy to power the turbines of the electric utility industry have been the fossil fuels—coal, oil, and natural gas.

In 1966, nuclear energy provided less than 1 percent of the total power generated, and even the great hydro-power resources of the nation provided only 17 percent of the kilowatthours generated. Thus, about 82 percent of the power was generated by fossil fuels, of which coal accounted for about twice as much as oil and natural gas.

But what of the future? If the past is any guide—and there is no reason to expect otherwise—we can expect that the demand for power in 1980 will exceed 3000 billion kilowatthours—nearly three times the demand in 1965.

Electric power will account for about 31 percent of total energy used in 1980, compared with 23 percent in 1965.

Within the past few years many things have happened which can, and will, change the energy mix used for power generation.

Developments of the next five years will have a significant impact on the extent to which the respective fossil fuels will share in the growing power market.

The two main factors are the growth of nuclear power generation and the severity, extent, and timing of air pollution regulations. There are other important factors, of course: the adequacy of the reserves of the different energy sources; the productive capacities of the industries to produce the fuels required; the costs and prices of the competing fuels; plant operating efficiencies; and the outcome of intensified research now under way, including the development of new methods for power generation.

All of these can be expected to affect in a multitude of ways the future role of the fossil fuels in power generation.

### NUCLEAR POWER

Very significant strides have been made in the technology of nuclear generation of electricity, and new capacity announced during 1966 exceeded that announced for coal-fired plants.

This upswing has since declined.

The chronology of new nuclear plant capacity announced or contracted since 1965 is as follows:

	MW
1st half, 1966	4,400
2nd half, 1966	9,600
1st half, 1967	21,000
2nd half, 1967	6,700

More importantly, during the past two years the costs of nuclear systems have increased as much as 40 percent in some cases, compared with significantly lesser increases for some coal-fired systems.

TVA, for instance, after ordering a nuclear plant in 1966 on the basis of competitive bidding, turned to a 1.3 billion kilowatt coal-fired unit for its next large plant, apparently because nuclear plant prices had risen so sharply.

Other factors affecting the rate of growth of nuclear power include the lengthy time lags in the delivery of new nuclear systems, the lack of experience in operating larger capacity plants, and reserves of uranium oxide.

As a result of these and other factors, it appears that many in the electric utility industry now are adopting a more cautious wait-and-see policy regarding nuclear.

Although air pollution is of little concern in nuclear generation, nuclear is not without its own environmental problems. Disposal of radioactive wastes is of vital importance, as is the prevention of thermal pollution of streams and coastal waters.

Measures to control these add to the ultimate costs of nuclear generation.

Difficulties are a common expectation of all new systems, but we cannot underestimate the value and importance of nuclear power generation.

On the contrary, the recent and continuing technological advancements in nuclear production of power have been most impressive.

They demand the respect and support of all who are interested in adequate supplies of energy for our future population and expanding economy.

## AIR POLLUTION

Let us now turn to an even more pressing problem that will affect fossil fuel use in power generation and about which I will speak at length today—air pollution.

Most air pollution control ordinances, already enacted or under consideration in states, counties, and major metropolitan areas, include provisions restricting either the sulfur content of fuels or the sulfur oxide emissions to the atmosphere, or both.

Areas in which sulfur limitations have been imposed are widely distributed geographically.

Los Angeles County was the first, and since then sulfur limitations have been adopted for the Metropolitan New York area, Dade County (Florida), New Jersey, St. Louis, and in Montgomery and Prince Georges Counties (Maryland).

Other areas currently considering air pollution controls on sulfur and sulfur oxides are mainly in the eastern part of the United States, and we can be sure that similar restrictions will be established, in one form or another, by additional governmental jurisdictions.

Natural gas, because it is relatively free of sulfur compounds, is not affected, but users of coal and residual oil will have to find some means to meet these new regulations.

To meet new antipollution requirements for sulfur oxides the following three alternatives are being given major attention:

1. New sources of fuel supply.
2. Fuel desulfurization processes.
3. Sulfur oxide removal processes.

There are other alternatives, such as the use of tall stacks and the location of new plants in rural areas, both of which will reduce ground-level concentrations of sulfur oxides. At best, these are interim solutions since they do not contribute to the overall reduction of air pollutants.

Another alternative to which considerable research effort is being directed is the development of new methods of power generation, for example, magnetohydrodynamics (MHD), electrogasdynamics (EGD), the fuel cell, etc.

These methods would not only contribute greatly to cleaner air through the higher efficiency of power generation, but would reduce thermal pollution of streams while conserving fuels.

Unfortunately, they are not expected to be commercially available for ten years or so.

First, let us consider new sources of fuel supply as one way to meet the new requirements.

It has been estimated that 95 percent of the coal con-



sumed in the 20 cities with the worst sulfur-oxide problems could not meet a 1-percent maximum sulfur content limitation.

In fact, one analysis indicates that more than 99 percent of the coal used in power plants in major metropolitan areas had a sulfur content over 1 percent. Since more than 96 percent of the total electric utility coal is consumed in power plants east of the Mississippi River, the largest potential source of supply of low-sulfur coals for these plants is concentrated in a small area comprising a few states in the southern Appalachian area.

In 1967, of the 264 million tons of coal shipped to electric utilities east of the Mississippi River, coals from this southern Appalachian area accounted for only 63 million tons, or 24 percent.

The remaining low-sulfur coals from this area were shipped principally to coke ovens of the steel industry and to United States coal export markets.

Our coal exports, incidentally, provide close to one-half billion dollars annually in credits to our international balance of payments.

In other words, if the electric utilities in the east are to meet the more stringent requirements of air pollution regulations, the coal mines in this relatively concentrated area will be called upon to increase substantially their productive capacity.

In total, the reserves of low-sulfur coal in this southern Appalachian area are adequate, but a large portion of them are owned by, or large tonnages are committed to, the steel industry.

Furthermore, these deposits are relatively costly to mine, and their longer distance from utilities would make them more costly than the higher sulfur coals now consumed in these plants.

Depending on the plant location, cost increases of from 25 to 40 percent can be expected.

As in the case of coal, the future of power generation from residual fuel oil will be affected materially by air pollution controls.

About 90 percent of the residual fuel oil consumed on the eastern seaboard where the sulfur oxide problem is

developing is imported, principally from Venezuela and the Caribbean, and ranges in sulfur content from 2 to 3 percent.

The other 10 percent of the residual fuel oil consumed on the East Coast is produced in this area from domestic and imported crudes.

Domestic crudes, and thus, residual fuel oil produced from them, are relatively low in sulfur content, averaging about 1.6 percent, but they comprise a very small portion of the total consumed in this area.

Accordingly, the residual fuel oil consumed in power plants on the eastern seaboard in 1966 contained an average of about 2.5 percent sulfur.

Given adequate lead time, additional amounts of low-sulfur residual from low-sulfur crudes could be made available to East Coast plants.

Based on recent price differentials, this may cost 20 to 30 percent more than is now paid for high-sulfur residual fuel oil.

Natural gas is a significant factor in power generation, accounting for about 22 percent of energy used in power generation last year.

It should be noted, however, that nearly 85 percent of the natural gas was used for power generation in areas west of the Mississippi River.

It is expected that most of the increase in natural gas used for power generation will develop in the west and will not offer a satisfactory answer to the sulfur dioxide problem in the east.

The immediate problems of using natural gas extensively as a substitute for coal and oil to meet air pollution regulations are inadequate pipeline capacity in relation to the quantities involved and the substantially higher cost of service on a firm basis over that on an interruptible schedule.

A second way to reduce sulfur oxides is by fuel desulfurization processes.

In the case of coal the degree of sulfur removal depends essentially on the amount of pyrites present and how they are dispersed in the coal.

The number of coals amenable to sulfur reduction are somewhat limited.

Furthermore, the use of conventional processes to effect substantial reductions in sulfur content are quite costly. For example, to reduce the sulfur in a Pittsburgh bed coal from 2.5 to only 1.5 percent would cost about \$3.00 per ton.

Detailed information on the costs of desulfurizing residual oil is not available, but a recent study by the Bechtel Corporation estimated that the incremental cost of reducing the sulfur content of typical Venezuelan crudes from 2.6 percent to 1.0 percent would be 58 cents per barrel.

Since the density of the product is lower than of the high-sulfur feed to the process, the desulfurizing cost would be 72 cents on a per Btu-equivalent basis.

In this case, the East Coast delivered cost of residual desulfurized to 1 percent sulfur would increase by 30 to 40 percent.

Moreover, it will require adequate lead time to make available large amounts of low-sulfur residual fuel oil to the East Coast, and then only at a substantial increase in fuel costs.

The third method for sulfur oxide control is through stack removal processes.

During the past few years, research and development efforts have been expanded considerably on processes designed to remove sulfur oxides from the gases in the combustion chamber or in the stacks of plants burning high-sulfur coal or residual fuel oil.

More than twenty different organizations are engaged in this activity, and progress has been encouraging.

On the basis of tests to date, the cost of removing sulfur-oxides from stack gases will be substantially less for most large new plants—and I repeat, for most large new plants—than the cost of substituting fuels or of removing sulfur from fuels.

In each case the stack-removal process is cost-sensitive to certain factors, and the values have not yet been fully defined.

Against this background of nuclear energy develop-

ment and the impact of air pollution regulations, what will be the future role of fossil fuels in power generation?

About 3 years ago the best estimate for installed nuclear capacity was 70,000 megawatts by 1980.

On this basis, and with air pollution at that time being considered to have only a minor impact on fossil fuel use, we estimated that the utility industry would consume 554 million tons of coal, 137 million barrels of oil, and 2.87 trillion cubic feet of gas.

In nearly every year since 1964, the estimates of installed nuclear capacity have been increased, and the most recent estimate by AEC is now 150 to 170,000 megawatts by 1980.

With the long delivery times for nuclear plants, the recent decline in nuclear plant orders, and the concern over uranium supplies, these recent estimates of installed nuclear capacity may not be revised upward sharply as they have in the past.

The impact on the energy-mix of the greatly increased emphasis on air pollution is much more difficult to evaluate.

Obviously, the demand for electricity which will exist in 1980 will have to be satisfied.

The supply of hydroelectric power is relatively inelastic, so that the balance of the kilowatts that will be needed will have to be supplied by fossil fuels, after allowing for the best estimates of those that will come from nuclear energy.

Under these circumstances, while there may be some shift between the competing fuels due to the impact of air pollution regulations, it is clear from our evaluation that no major shifts between the fuels can be expected by 1980.

There could, however, be very appreciable changes in the *sources* of supply of the individual fuels, at least until successful sulfur dioxide removal processes are developed.

Taking all the new developments into consideration and if the AEC estimates of 150,000 MW by 1980 prove correct, present projections for fossil fuel use by the utilities for 1980 would be reduced by the coal equivalent of about 200 million tons.

This is a decline of 30 percent from our Bureau of Mines 1965 estimates, but because of the growing demand for electricity it still represents an increase in fossil fuel use by the electric utilities of more than 150 percent over the present requirements.

The fossil fuels will have to continue to supply the largest share of energy for electric power generation for the next ten years.

In the longer term, however, their use could be curtailed unless increases in productivity, efficiency, and low-cost methods for controlling the detrimental effects on the environment—land, air and water—are found.

The prospects are good, however, that research can find the necessary methods to keep fossil fuels competitive in the electric utility market.



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**NEW HORIZONS FOR COAL—  
THE COMEBACK INDUSTRY**

By ROBERT E. LEE HALL \*

Senior Vice President, National Coal Association,  
Washington, D. C.

*For the benefit of skeptical financial analysts and investors, Mr. Hall describes coal industry's successful comeback and limitless horizons, due to technological breakthroughs, and growing signs of oil, gas and even atomic energy limitations. He explains why electrical utilities have become coal's biggest customer, quotes Atomic Energy Commission Chairman Seaborg's admission regarding the increasing use of coal for the production of electricity over the next several decades, and cites statements by the gas and oil trade association as to the limitations of the fuels they respectively represent. Note is taken of coal's increasing exports, and prospects of making high-octane gasoline and quality gas from coal.*

The coal industry is on the rise. That statement alone should startle anyone who has not looked at the modern coal industry in recent years. If you dismissed coal from your mind a few years ago—wrote it off back in the days

when some phrase-maker characterized it a "sick industry,"—I can only report that you wouldn't recognize the patient today.

Coal production in the United States hit 532 million tons in 1966, up 4 percent from the previous year—and in 1967 was up about 7 percent ahead of last.

You may think that with an expanding population and continuing prosperity, this is not a significant fact. The United States used more fuel of all kinds than ever before. But consider this: For the second consecutive year, coal increased its share of the total energy market in the United States.

Time was when coal supplied almost two-thirds of the energy consumed in the United States. Less than 20 years ago, it supplied half. Then it hit the skids, thanks in large part to the competition of other fuel supplying industries. Coal had abundant resources, more than those of oil and natural gas, but it neglected the other side of this partnership—it let its technology lag.

When the superior efficiency of the diesel locomotive sent the old steam engines to the scrap heap, and when the superior convenience of oil and natural gas captured most of the home-heating market, coal lost two of its biggest outlets. About the same time, wages of miners rose sharply, and it became impossible to mine coal the old-fashioned way and stay in competition for the markets that remained. It was about this time that the writers began calling coal a sick industry, and it seemed like a good diagnosis.

But the coal industry breeds some stubborn men, whether they are miners or Chairman of the Board. The industry called on technology. The first step was to modernize the mining process. This has been done by heavy investment in complex machinery—but done so successfully that coal has bucked the trend of inflation. The average f.o.b. mine price of coal was \$4.99 per ton in 1948; last year it was \$4.55. The average miner produced about six tons a day in 1948; today he produces about 18 tons.

The business gamble has paid off, and bituminous coal today is a competitive fuel to be reckoned with in Amer-

ica's industrial economy. We acknowledge with some sense of gratitude, a debt to the financial community for gambling with us—and, of course, of having the same commendable confidence, wisdom and foresight as the coal producers themselves!

### *Coal's Biggest Customer*

With increased ability to get coal out of the ground quickly and economically, we still needed some place to sell it. That place was the electric utility industry, which has been doubling its capacity every ten years. Electric generating stations are now coal's biggest customers, taking more than half our output and using it to generate more than half of the electricity in the United States.

Between mine and market there was the problem of costly transportation. The railroads gave us a big part of the answer with unit trains—hauling 10,000-ton lots direct from a single mine to a single power plant at rates as much as 50 percent below the old single-car tariff.

By drastically cutting lost time—or by utilizing rolling stock more efficiently—and by reducing the amount of paperwork involved in freighting coal to market, the coal-carrying railroads have been able to make substantial reductions in shipping rates, in some instances by as much as \$1.50 per ton. These economies extend coal's ability to compete in domestic energy markets at a time when competition is keener than ever.

About one-third of our coal output comes from surface mines—the strip mines—where mechanical giants, looking for all the world like prehistoric monsters, remove the overburden from the coal seams and expose the coal for smaller shovels to scoop into huge trucks. This mechanical revolution in the coal mining industry is far from complete, according to all indications. Coal mining equipment manufacturers have on the production lines and their drawing boards, more efficient machinery to raise to even greater levels the amount of coal produced on a ton-per-man basis.

About 100 million tons of coal is moved annually along America's inland waterways, and bigger tows of coal-

carrying barges again are resulting in reductions in the cost of delivering coal to customers. New and more efficient loading and unloading machinery at inland docks adds to the savings.

Meanwhile, the utilities have been busy with technology, too. In many places they are building mine-mouth power plants which consume up to two million tons of coal a year from mines right next door, and then ship their power over extra-high-voltage transmission lines to load centers 300 miles or more away.

One other mode of transportation, developed by the coal industry itself, is the coal pipeline. This is a perfectly feasible system—it has helped convince the railroads to try unit trains. The unit train rates closed down a 108-mile pipeline that operated for five years in Ohio—but where no rail service is available, it's still a good way to move coal. In fact, the Southern Pacific Railroad is getting into the coal pipeline business; with the Southern California Edison Company it is building a 275-mile line from a new Peabody Coal Company mine in northeastern Arizona to a power plant in Nevada. The plant will supply electricity to California—and that's one new horizon for coal. This is coal's first large-scale invasion of the huge West Coast energy market.

It won't be the last. There are tremendous coal reserves in the Rocky Mountain area. Between them and the huge energy demand in California lies nothing but a few hundred miles of difficult geography. Technology is already bridging that gap.

Well, what about the horizon for coal? What lies ahead?

First, what about our biggest market, the electric utilities? Will we hold on to it?

That's a good question, and I'm glad I asked it. There are half a dozen answers, and all of them are "Yes"—coupled with different reasons.

### *Utilities Market*

Utility decisions to burn coal in new generating plants are being made on the basis of sound economic facts of life. Electric power industry executives know, for ex-

ample, that bituminous coal is the most economical fuel available for generating station use in the United States.

In 1965, the most recent year for which we have complete data, the national average cost of coal burned in steam-electric power generation was 24.4 cents per million Btu. Natural gas ranked second at 25.0 cents, and oil was a rather distant third at 33.1 cents per million Btu.

I was too modest when I said coal generates half the electric power in the United States. When we take the 80 percent of the power produced by steam-driven generating plants, using some sort of fuel, coal's share of the market goes up to 65 percent. And it's a growing market—it took 265 million tons of coal last year, up 9.2 percent from 1965. This year, we expect the utilities will burn about 281 million tons.

### *Export Market*

A significant element of strength in coal's future lies in the export market, where American coal is becoming more competitive (and necessary) than ever. Thirty percent of the coal we now export comes here to Canada to be used for metallurgical purposes, for electric power generation, and for general industry markets. The European Common Market countries take another 40 percent of the U.S. coal exports, primarily for metallurgical use, although almost all of our exports to West Germany go for other uses. Exports to Japan, accounting now for about 15 percent of total foreign shipments, are entirely metallurgical.

Colliers capable of carrying 80,000 tons or more are now in use, and more are under construction. At our East Coast ports, such as Hampton Roads, modern equipment permits loading of these huge colliers in a matter of hours, reducing turn-around time to a minimum.

Obviously, with that share of the market and that sort of price structure—not to mention comparative reserves—coal is going to be around a long time in the existing plants of the electric utility industry.



### *Unquestioned Reserves*

On second thought, I will "mention" comparative reserves. Both in our own country, and elsewhere throughout the world, questions are being raised about the adequacy of reserves of oil, natural gas and uranium—the necessary ingredient for atomic power. U.S. coal is not subject to such question. Measuring current recoverable reserves of coal in the United States against present and projected demands reveals some 830 billions of tons of recoverable coal yet to be mined in the United States, reserves sufficient for the next 1,000 years.

Up to this point, I haven't said a word about competition, present and anticipated, from atomic energy. I will now say several.

Let's examine these partners for progress: resources and technology. Housebreaking the atomic bomb, harnessing nuclear energy to produce electric power, is surely the greatest technological triumph of the first two-thirds of this century. In many countries, and particularly in my own, great amounts of scientific manpower, and great gobs of the taxpayers' money have been spent on it.

And, to a degree, this massive effort has succeeded. The technology of atomic energy has been developed until it is, in many areas of the United States, competitive with power generated from coal—or oil, or natural gas.

### *Atomic Costs Are No Longer Cheaper*

I might add here that this competitive status, proclaimed in public statements and image-building advertising by the makers of atomic reactors, has apparently been attained at the expense, at least in part, of their stockholders. For example, General Electric landed a contract for two large atomic power units for the Tennessee Valley Authority, and made much of the fact that they were supposed to produce power more cheaply than coal.

But then GE announced a price increase, and admitted in its annual report that its reactor division had operated for years at a loss; with the price increase, GE said, it hoped to make a profit on the division for the first time. In other words, all the reactors it had sold

previously, including the two to TVA, were subsidized by GE shareholders.

Two or three months ago, TVA again ordered new generating equipment—but this time it said that because of increases in the price of reactors, coal and atomic power were again running neck-and-neck. It ordered a third reactor to go with the two previously bought—but it also ordered a new generating unit, which will be the largest ever built, and it will be powered with coal.

So as to technology, let's say for the moment that coal and atomic power are about even in the electric utility market. But how about the other partner, resources?

As I mentioned before, and repeat for emphasis again, in the United States, the very conservative U.S. Geological Survey says we have 1.6 trillion tons of coal. Using the rule of thumb that half the coal in the ground is recoverable, that is a resource of 830 billion tons of coal. In fact, coal constitutes 68 percent of all U.S. mineral fuel resources, including oil, gas and such undeveloped resources as oil shale.

### *Low Uranium Supply*

On the other hand, low-cost U.S. uranium resources, although among the largest in the world, are only a fraction as great in terms of energy content. In fact, fraction is too impressive a word—would you believe a quarter of one percent? Known reserves of uranium oxide, or yellowcake, in the United States are 140,000 tons. This is energy equivalent to two billion tons of coal—or about as much coal as U.S. utilities will burn in the next eight years.

In fact, the United States does not have enough low-cost uranium—and by low-cost I mean around \$8 per pound of yellowcake, or about the cost of the fuel for the reactors which are now competing with coal—to assure a fuel supply for the expected life of the reactors now operating, under construction or announced.

I did not invent these figures. They are based on public statements of officials of the U.S. Atomic Energy Commission, and the Chairman of the Commission, Dr.

Glenn T. Seaborg, has conceded the correctness of our calculations. In fact, we differ with the AEC on this question in only one major respect—AEC says an intensive search for more uranium is under way, and it expects to find more. We say more uranium will undoubtedly be found—but we are skeptical that anyone will find the fantastic amounts that will be required to meet the grandiose plans of some atomic energy promoters.

### *Squandering Our Reserves*

For the type of reactors being built now are highly inefficient consumers of uranium. AEC is trying to develop more efficient ones, including the so-called fast breeder reactor which would convert atomic fuel into fissionable form at a greater rate than it consumes it, so that after 12 to 15 years, such a plant would be able to refuel itself and another of the same size. (You can see that even the fast breeder will not entirely meet the needs of the utility industry even if it keeps doubling very ten years.)

Though our supplies of coal are vast, they are finite. Some day we will need our low-cost uranium much more than we do now—need it to fuel the first fast breeders. But AEC is squandering it now in slow, inefficient, unneeded reactors—feeding the seed corn to the hogs. It is putting its trust on a long-shot hope that somewhere, somehow, it will find more uranium—enough more, and cheap enough, to replace that being squandered today. Like Mr. Micawber, it lives in the confident expectation that something will turn up.

Charles Dickens would be thunderstruck. He conceived Mr. Micawber as a shabby-genteel failure, not a policy guide for a well-tailored multi-million dollar industry and a great shiny government agency.

### *Advises Canada Not to Sell*

Now I am quite aware that Canada has a lot of uranium—perhaps more than the United States, and certainly more than Canada now needs. If the United

States is short of uranium, it represents a market for the Canadian product—but I suggest that Canada ought not to sell.

Only three countries of the free world have substantial uranium deposits. One is the United States, which as we have seen will need to keep all its uranium for its own use. Another is South Africa, which produces a limited amount of uranium as a by-product of its extremely deep and difficult gold mining, but cannot increase this output greatly except at skyrocketing cost. That leaves Canada with the main supply of uranium available to the rest of the free world.

Many energy-poor nations are turning—or want to turn—to atomic power for their industrial development. Because they must import conventional fuels, or the cost of producing their own fuels is high, they can afford to pay more for atomic fuel than can the United States. It is in these countries that Canada should sell its uranium. There it will do more good—and there, frankly, Canadians will make more money. If some of these countries are not yet ready to buy Canadian uranium, just wait. They will be.

Well, I have given you a long answer to a short question, what about atomic power? Dr. Seaborg answered it more directly and with more authority recently when, as Chairman of the Atomic Energy Commission, he declared:

"Atomic energy will play an increasing role in the production of electricity, but I do not believe it will eliminate the use of coal and oil for this purpose for many, many years to come. Present projections show an increase in the use of coal for the production of electricity for the next several decades, because power needs will grow so fast that all our energy resources must be employed. It is clear that coal will play an important role in our future energy supply picture."

### *Sulfur Pollution*

Without conscious attempt to pun, one "cloud" on coal's horizon is the over-response of local air pollution authorities to the enormous effort of the U.S. Public Health Service to point an accusing finger at sulfur dioxide from coal burning as a public offender. We feel confident, however, that the rule of reason will eventually prevail since recent Congressional hearings have proven that HEW has been moving too fast in the field of accusation without sufficient proof. Tall stacks offer the only existing feasible technology to minimize sulfur dioxide in any significant amount at ambient levels. The "state of the art" has not yet developed other feasible control methods. However, research by industry and government is at the "breakthrough" stage and we believe solutions are at hand.

Similar research efforts in the past have been successful in developing a technology which makes it possible to control more than 99 percent of the soot, dust, and ash from coal burning, thus removing one of the former problems encountered in coal burning. The coal and utility industries are now spending millions of dollars on research to control sulfur oxides. Congress in the new clean-air bill is considering authorizing accelerated Federal research on the subject. We are confident, therefore, that these problems will be met before serious damage is done to the coal complex.

A few other factors of coal's future with electric utilities: Nearly all major utilities are buying coal now on long term contracts—some as long as 30 years. This is a big new stabilizing factor in the coal business, where once the practice was to get a mine ready and then operate it when, as, and if your salesmen could dispose of the coal on spot contracts. Now a company, assured that money will be coming in on a contract for 30 years, can dedicate a whole new mine to that customer. You may be hearing more about this, for the company may be coming to the financial community for capital to install the mine.

I'm afraid I've given the impression that the coal industry is placing all its bets on the electric utilities. It



isn't. Most other present markets will increase, though not at such a pace.

### *Coal By-Products*

But there are bright horizons in new directions for coal. At the risk of making analysts unhappy, I can report good prospects for high octane gasoline and pipeline-quality gas from coal.

There is now in operation at Cresap, West Virginia, a pilot plant for producing gasoline from coal. The process was developed through research by Consolidation Coal Company. The plant was built under a contract between the coal company and the U.S. Office of Coal Research of the Department of the Interior. There is every reason to expect that the gasoline produced at this plant will be reasonably competitive with gasoline produced from crude oil. Another process, the H-coal process under development by Hydrocarbon Research, Inc., of Trenton, New Jersey, under another OCR contract, is also moving forward toward the pilot plant stage with equally good prospects for success.

While the competitive factor is an important aspect of gasoline made from coal, bear in mind that domestic reserves of crude oil in the United States are limited, while coal reserves are not, in terms of long-range demands. Proven U.S. petroleum reserves are reported now at approximately 31 billion barrels, which represents a reserve life index of only 10.98 years supply,<sup>1</sup> with total world reserves listed at 300 billion barrels. By contrast, it has been estimated that recoverable reserves of U.S. coal contain 2,300 billion potential barrels of oil—that's 2 trillion, 300 billion barrels! No wonder we feel there is a justifiable bull market on coal! And on coal STOCKS for that matter!

Under joint industry and government sponsorship, coal gasification research is forging ahead. The so-called carbon dioxide acceptor process and the hydrogasification process are at relatively advanced stages of development. It is now possible to project future pipeline quality gas production costs based on coal as the raw material—and the product appears to be competitive.

The need for gas from coal only incidentally results in the development of a new market for coal, since reserves of natural gas in the United States, like those of petroleum, are also limited. New gas discoveries are not sufficient to reverse the downward trend of the reserve life index of natural gas, now only at 16.54 years supply.<sup>2</sup> Supplemental supplies of synthetic gas will inevitably be needed later in this century, and the coal industry will be ready to supply it at competitive prices because of research being pursued.

This is what the modern American coal industry is all about, and what the future looks like to us who are in it. Nor is it just partisan optimism, for there is an abundance of factual evidence to justify the confidence in coal, despite the implications of the atom, environmental problems, or the rising cost of labor and materials. Utility systems are entering into long-term contracts with coal producers, who in turn are dedicating production from new mines to meet the lifetime needs of new generating plants. High-quality coking coal from U.S. mines also is being shipped to overseas destinations under long-term contracts.

All in all, the bituminous coal industry in the United States is a healthy segment of our economy. In looking ahead, we are not arbitrarily downgrading the importance of the environmental problems that must be solved if our projections are to be realized. The fact is that we have already discounted—in the investors' sense—any pervasive effect on future markets inherent in the public's proper cry for cleaner air, beautification of the land and purification of our water. These problems must and will be met in a partnership between industry and government.

One hundred years from now we may not recognize our cities as you see them today. There undoubtedly will be excursions run to the moon and, perhaps more unbelievable, there may not even be a KENNEDY in public office—but as Churchill once said of England, there will always be a coal industry.

In 2067 we will have only a 900 year coal supply left over. Yes, the "New Horizons for Coal" are limitless. You

cannot see the end! In the coal industry there has indeed been a shotgun wedding between "Resources and Technology" and we believe we are unbeatable "Partners with Progress"—a successful marriage that no man can put asunder.

(1) Source: American Gas Association and American Petroleum Institute.

(2) Source: American Gas Association and American Petroleum Institute.

\* An address by Mr. Hall before the Financial Analysts Federation 1967 Fall Conference, sponsored by the Toronto Financial Analysts Society, Toronto, Canada.

## GOVERNMENT EXHIBIT 247

BARRON'S

*National Business and Financial Weekly*

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## NATURAL GAS FIASCO

*Federal Price-Fixing Is Finally Producing a Shortage*

EL PASO Natural Gas Co., which (according to an article in Barron's barely six months ago) was supposed to be "Making Fewer Headlines, More Money," last week made quite a splash on the financial page. The company announced that it has signed with Sonatrach, Algeria's state-owned petroleum monopoly, "definitive agreements for the largest liquefied natural gas (LNG) project in history," one which involves capital outlays of nearly \$1 billion and is designed, starting in the fall of 1973 and extending nearly to the end of the century, to deliver one billion cubic feet of fuel per day to East Coast ports. Besides pipelines and the like, the project calls for the construction of liquefaction and regasification plants, as well as nearly a dozen specially designed vessels, biggest of the kind ever built, to carry the frozen gas. "This will mark the first time that energy supplies of this type have been imported into the U.S. on a permanent basis," the company proudly observed, adding that it was "particularly pleased to be associated with this pioneering venture. . . ."

\* \* \* \*

Apart from its unprecedented size and scope, the project is noteworthy on a number of counts. For one thing, if carried out faithfully by both parties, the contract will mark a welcome change in the commercial practices of the Algerian Government, which up to now have smacked less of the Harvard Business School than of the Barbary Pirates. Since gaining independence a decade ago, Algeria has seized without compensation a vast amount of foreign property, including banks, insurance companies

and the personal possessions of thousands of former French residents. Sonatrach—Societe Nationale pour la Recherche, le Transport, la Transformation et la Commercialization des Hydrocarbures—launched its career three years ago by borrowing \$15 million from a couple of gullible U.S. banks. No sooner had the ink dried on the loan agreement than Algeria began pressuring the American oil concerns on the scene to submit to discriminatory treatment regarding royalties and taxes. Since then Algiers (which broke off diplomatic relations with Washington during the last Israeli-Arab War) has "sequestered," or confiscated, the bulk of U.S. investment within its borders, including concessions held by El Paso Natural Gas. "Never do business with a man you can't trust," advised J. P. Morgan, but the old man has been dead a long time. Perhaps the company will come out all right.

That's the stockholders' worry. Profitable or otherwise, the huge transaction, which last week's announcement said was "designed to ease U.S. gas supply problems," has disturbing significance for the whole country. For it plainly indicates that domestic reserves of the useful and versatile fuel, once deemed inexhaustible, are not keeping pace with future needs, an alarming state of affairs which the Federal Power Commission belatedly has come to recognize. Just a fortnight ago, the FPC, which regulates interstate distribution of natural gas from well-head to burner tip, released a staff report on supply and demand, warning that within the next five years—sooner in some areas—a critical nationwide shortage will flare. What the agency failed to point out is that its own regulatory policies, by deliberately (if not with malice aforethought) imposing an artificial lid on prices, have been largely to blame. Price control will always have its blind worshipers (hi there, Professor Galbraith). Only the free market, however, can keep the home fires burning.

For the past 15 years, to be sure, the regulatory bodies have been singing a different tune. In 1954, the U.S. Supreme Court, in a singularly ill-advised decision, thrust on the Federal Power Commission authority to regulate not only transmission and distribution companies but also



producers of natural gas. Since then, despite protracted litigation, the FPC has gradually extended its sway. The agency has decreed, beyond further legal appeal, area prices of approximately 15.5 cents per thousand cubic feet of gas for the Permian Basin. (Ceiling prices for all other major areas are still in dispute.) The ceiling for Southern Louisiana was finally set by the FPC at nearly five cents per mcf., or 20%, below the provisional guideline posted eight years earlier. As in the Permian Basin rate case, moreover, the FPC employed in its calculations 1960 cost figures, which it so far has refused to up-date. Thus, according to Stanley Learned, director and former president of Phillips Petroleum, the government has "established a concept for producer prices under which the industry cannot recover its costs."

Such policies have naturally warmed the hearts of users. However, producers, discouraged by lack of incentive, have sharply curtailed their efforts. Completions of U.S. exploratory gas and condensate wells declined from 909 in 1959 to 429 in 1968. In the latter year, for the first time in history, net production exceeded additions to reserves. The reserves-to-production (or R/P) ratio today stands at only 14.6, or considerably less than a 15-year supply, barely two-thirds of what it was when the FPC acquired jurisdiction. Some pipelines are unable to contract for future needs; hence, expansion programs are in jeopardy. Now El Paso Natural Gas Co. has decided to go four thousand miles overseas for fuel which will cost more than 50 cents per mcf., perhaps half again as much as gas moved by pipeline from the Gulf Coast.

Even the federal regulators, as noted, have finally grown concerned over what they have wrought. Early this month the FPC issued a staff report that didn't make pleasant reading for the boss. In brief, it concluded that the national reserves-to-production ratio would decline to 10.2 by the end of 1973. "Even a substantial improvement in reserve additions above that experienced during the past five years will not prevent the R/P ratio from dropping to about 11." Regional gas supply deficiencies are likely. "The uncommitted portion of the total

proven reserve inventory will have been exhausted by 1974, at which time the natural gas industry's capacity for growth will be limited." None of the foregoing, said a miffed Commissioner, provides "the basis for a round of price increases." Nonetheless, the full Commission has swiftly moved to make a start. On October 3 the FPC decided to treat as new supplies (hence, worth more money) all gas henceforth discovered on acreage already committed to the interstate market. Last Tuesday in what the agency described as a "turning point" in regulation, it decided to liberalize the pricing of gas reserves which pipelines themselves own.

. . . . .

Too little, say industry spokesmen, and too late. To meet the looming emergency, in the view of Phillips' Learned, the Commission must take more far-reaching steps, including reconsideration of its Southern Louisiana decision; approval of an increase of at least five cents per thousand cubic feet in both wellhead and flowing gas; and recognition in price-fixing of "changes in taxes and the results of inflation." For the long haul, Mr. Learned approvingly quotes the views of Dr. Clark A. Hawkins, associate professor of finance and economics at the University of Arizona, and authority on the subject. In a new book, the latter writes: "The market should be the mechanism for determining price because natural gas price fixing by governmental fiat is not only unnecessary but unworkable as presently attempted. Also, it is only the market that will give the lowest price consistent with maximum output in the long run. The standard of market price could be feasible under existing law if the Commission would espouse it and proceed to the courts." Failing that, of course, a Congress truly responsive to the needs of consumer and producer alike could undo the longstanding judicial mischief.

Like El Paso Natural Gas Co., we would be inclined to bet on the sorry status quo. The East Coast doubtless will come to rely for fuel on a source of supply that is unfriendly at best and, at the slightest provocation, downright hostile. As the U.S. proceeds to import natural gas

—at higher prices, be it noted, not lower—the poor old balance of payments will suffer a fresh, and wholly gratuitous, setback. “Economists,” so Dr. Milton Friedman has said, “may not know much. But we do know one thing very well: how to produce shortages and surpluses. Do you want to produce a shortage of any product? Simply have government fix and enforce a legal maximum price on the product which is less than the price that otherwise would prevail. . . .” He should be teaching at Harvard.

## GOVERNMENT EXHIBIT 253

CCH

## NUCLEAR POWER ECONOMICS: 1968-1969

[T 3043]

Philip Sporn analyzes competition in power generation.—Reproduced below is the full text of a report prepared and submitted by Philip Sporn to the Joint Congressional Committee on Atomic Energy on the developments in nuclear power economics during the period from January 1968 through December 1969.

Mr. Sporn finds cause for concern in the increase in the costs of power generation from fossil fuels and particularly nuclear fueled plants. The increased costs of nuclear power, in Mr. Sporn's opinion, has greatly injured its competitive position, especially in view of the fact that such high economic hopes were held for it at its inception.

Developments in Nuclear Power Economics:  
January 1968—December 1969

*Report Prepared for the Joint Committee  
on Atomic Energy by Philip Sporn,  
Retired President, Consultant  
American Electric Power  
Company*

## Part I

*The Retrogression in the Competitive Position  
of Nuclear Power vis-a-vis  
Fossil-Fueled Power:*

During the past two years there has taken place a remarkable and ominous retrogression in the economics of our nuclear power technology. The light-water-moderated reactor, which two years ago offered potentials for nuclear power generation competitive with fossil fuel at 22¢ to 24.8¢ per million Btu, has today lost position where it is competitive at 28¢ to 29.5¢ per million Btu fossil fuel cost.

This in turn makes it difficult to accept without something more than a grain of salt the statement of the Atomic Energy Commission<sup>1</sup> "the outlook for the future for nuclear power continues to be very promising (because) of the continuing economic competitiveness of nuclear power in spite of increasing costs as prices for both nuclear and fossil plants increase."

How did this come about? The reasons for that are many. Among the most important, but nowhere near all, are higher costs of nuclear components, higher cost of turbines, higher construction costs, continuing escalation during the entire construction period due to the inflationary cycle, longer construction time which results in higher interest and overhead charges, higher capacity charges in view of the current coupon rate of approximately 9.5% on AA utility bonds which brings the necessary capital charge to give an adequate return up to 16%, lower capacity factor due to the recognition that with the growth of atomic power which will take place between now and 1980 no atomic plant can, except for the shortest time, be expected to operate at a capacity factor as high as 80% and that, therefore, a more rational capacity factor is one five points lower, or 75%.

It is true that fossil fuel costs also have gone up, but even so, nuclear power has lost position vis-a-vis fossil fuel (mainly coal). This can be seen very clearly in Table 1, which shows costs of both coal-fired and nuclear-fueled plants, the former in terms of an 800-MW unit and the latter in terms of an 1100-MW unit, as of July 1, 1969, for completion in the case of nuclear in 1976, and in the case of coal in 1975. All the figures in that tabulation are significant and striking but two stand out in particular—the cost of switchboard delivered nuclear energy of 7.06 mills per KWh as against 6.65 mills for coal-fired energy with coal at 25¢ per million Btu. On the basis of these figures, the competitive break-even point for nuclear power is 29.7¢ per million Btu coal cost.

<sup>1</sup> *The Nuclear Industry*, 1969, page 11, U.S.A.E.C.



I believe these are in a sense idealized costs, but yet they have in them the element of being hardheaded and pragmatically attainable figures based upon achieving every legitimate economy.

I am further convinced of their soundness in the light of:

1. Actual costs of a nuclear project completed during the year involving a 600-MW unit where the capacity factor employed was higher—80%—and the capital charge lower—15% which yielded an expected production cost at the switchboard of slightly over 8 mills per KWh, and

2. On a second job undertaken during the past year and carefully evaluated where the nuclear unit was in the 800-MW range and where the capital charge employed was higher—16.6%—and the capacity factor was slightly higher, the expected leveled cost obtained was very close to 7.8 mills per KWh.

It is not surprising that all these developments have already had a significant effect on the recent experience of the nuclear industry. It has caused cancellation of one or two previously announced projects, delay in scheduling of other units committed for; it has brought about interposition of fossil fuel units to be completed ahead of what might have been scheduled atomic units, and in some cases it has brought about plain decisions to go fossil when, if things had gone differently, atomic units would have been ordered. In connection with the last, it needs to be pointed out that every time a fossil-fueled unit is ordered for whatever reason, where an atomic unit might have been ordered under conditions more favorable to nuclear power, the particular nuclear unit is lost for approximately 30 years.

. . . . .

**DEFENDANT'S EXHIBIT 1**

October 9, 1957

**Memorandum to: Mr. R. J. Hepburn**

In connection with your memorandum of October 8, I am sorry that the underground miner did not perform. I believe this method of mining has a great future, but underground mining is not our business, and under the conditions, I think the only thing for us to do is to continue to wait until someone in the deep mining field produces a working machine and a workable system.

/s/ **Frank Kolbe**  
**President**

## DEFENDANT'S EXHIBIT 2

October 18, 1957

MR. F. F. KOLBE

Re: Northern States Power Company  
Displacing gas with coal

We have had several discussions with Mr. Hoffman of the above company, trying to replace some of the gas they are burning with our coal moving in Midwest barges.

With their present gas contracts, they could consider displacing 600,000 MCF (approximately 75,000 tons of coal) now costing them 24.94¢ per million, and 800,000 MCF (approximately 100,000 tons of coal) costing them 23.9¢ per million. The average of these two is 24.4¢ per million. Unloading, storage, ash handling and all of the labor connected with handling coal versus gas—using a very reasonable figure by them—is placed at 1.4¢ per million.

This means we would have to sell this block of coal at 23¢ per million or \$5.20 per ton inboard barges at their plant. Our total transportation cost at present is \$2.12, leaving \$3.08 f.o.b. mine for this 175,000 tons additional business.

Our present contracts with them we estimate will net us at the mine next year, with our present barge and rail rates, \$3.986. The average price on the total tonnage would therefore be \$3.67. Our portion of the above would be 150,000 tons at \$3.986 and 87,500 tons at \$3.08.

I have a date with Mr. Hoffman for Wednesday of next week and would like to talk with you before that time.

J. M. MORRIS

EW

DEFENDANT'S EXHIBIT 3

MID-WEST COAL PRODUCERS INSTITUTE, INC.  
307 NORTH MICHIGAN AVENUE  
CHICAGO 1, ILLINOIS  
TELEPHONE CENTRAL 6-2755

A. J. CHRISTIANSEN  
SECRETARY

June 19, 1958

Mr. A. H. Truax, Chairman  
Truax-Traer Coal Company  
111 North Wabash Avenue  
Chicago 2, Illinois

Dear Harold:

Attached is copy of an excerpt from the opinion of Trial Examiner Francis L. Hall in one of the Tennessee gas cases consolidated with the Canadian gas cases, in which he comments on the position of coal in natural gas cases. This illustrates that coal is not going to get any help from the Federal Power Commission under the present laws, and that the coal industry is going to have to meet the competition of natural gas by their own marketing efforts, and that the railroads are in the same boat.

I thought you might like to look at this finding of the Examiner.

Yours very truly,

/s/ Andy  
A. J. CHRISTIANSEN

AJC:MAT  
Enclosure

cc: Mr. Frank Nugent  
Mr. F. F. Kolbe

Excerpt  
From the Opinion of  
Trial Examiner Francis L. Hall

*In the Matter of  
Tennessee Gas Transmission Company  
(Docket No. G-11107)*

*Opposition of Coal Intervenorors*

The Coal Intervenorors, namely, National Coal Association, United Mine Workers of America, Fuels Research Council, Inc., Maher Coal Bureau, Anthracite Institute, Truax-Traer Coal Company, Baukol-Noonan, Inc., and Dakota Collieries, Inc., as representatives of competitive fuel, transportation and labor interests, presented extensive evidence in the consolidated proceeding in opposition to the expansion of natural gas service in the mid-west. This presentation appears to be designed to show the impact of displacement of coal by natural gas in the competitive area and will be considered in detail in the Examiner's final decision dealing with the competitive issues.

However, in the event any part of the evidence presented by the Coal Intervenorors be construed by them to relate to (1) the proposals in Docket G-11107, (2) the disposition herein made of the issues involved in this docket, or (3) the issues to be disposed of in other decisions to be issued by the Examiner prior to the final decision involving the competitive issues, the following considerations control the dispositions made.

Underneath the efforts of the Coal Intervenorors is an understandable impulse to prevent competition and protect coal markets. Their position can best be understood by keeping two things in mind. First, that the coal industry is constantly competing with the suppliers of

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<sup>23</sup> As one of the witnesses for the Coal Intervenorors testified, "I think that coal in the future should expand, though probably a gradual rate, providing, of course, we have sound economic conditions for fuel development." Coal consumption in the United States in 1956 was the highest since 1931.



other forms of energy for the consumer's dollar and it is the needs and wants of the consumer, not the actions of a regulatory commission, that determines, or should determine the extent to which a particular industry shall prosper.

In this day and time people do things differently and better. They prefer the modern way of life and its conveniences and are mindful of the fact that gas has brought greater prosperity and better standards of living. Unless there exists in the consumer's mind an atmosphere favorable to a particular fuel sale, the sale becomes impossible in a competitive market. Accordingly, for the coal industry or any other fuel industry to win the competitive sales battle it must give fuel consumers a better reason for buying its product.<sup>24</sup>

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<sup>24</sup> The one factor which is perhaps giving natural gas distributors their greatest concern today is the skyrocketing prices paid to producers for, as hereinabove indicated, a continuation of such increases could push the cost of gas to the point where the average consumer cannot afford to pay for it or convert to its use. This factor, however, can be controlled by the Commission in appropriate circumstances (*Signal case, supra*) and may have to be controlled to prevent nullification of the "primary aim" of the statute which is "to protect consumers against exploitation at the hands of natural gas companies" (*F.P.C. v. Home Natural Gas Co.*, 380 U.S. 591, 610; *Phillips Petroleum Co. v. Wisconsin*, 347 U.S. 672, 685). Whether the Commission can or should exercise its discretion in a certificate proceeding to keep producer prices down to the point where they will not exceed average field prices is one of the issues presently pending for decision before the United States Circuit Court of Appeals for the Third Circuit in *Public Service Commission of the State of New York, et al. v. F.P.C.*, Nos. 12,401 and 12,403. This case involves the contract price for CATCO gas reserves acquired by Tennessee as a part of its over-all gas supply relied on in Docket G-11107 (17 F.P.C. 732, 890).

It would appear that every increase in the field price of gas that is allowed to become effective will prove to be another shot in the arm for the coal and other fuel industries and a darkening cloud for the pipelines, distributors and consumers.

Under no circumstances should the producer's appetite for higher field prices be permitted to become a pit into which any segment of the industry may fall. Stated another way, the profit sheet of the producer is not the only yardstick of a healthy industry, for now that billions of dollars have been invested the investments must

Obvious factors account for the ascending demand for natural gas for both home and industry use. Gas rather than some other fuel has carried a greater selling power in the home because of its convenience, cleanliness, laborless features, and the further fact that up until now it has generally been cheaper than other fuels. Where industry has converted to the use of natural gas it has done so to reduce costs, improve products and processing methods, and develop new products.

The coal industry's drumfire of opposition has been aimed at practically every expansion of natural gas service, for such industry has been and continues to be alarmed about encroachments of natural gas upon coal markets. While no one would care to minimize the inconvenience of having the coal industry's plans upset, there are nevertheless some actions that have to be taken by a regulatory agency for the good of a community, area or the country as a whole, regardless of how painful they may be to a particular industry or part of an industry. Any decision enabling expansion of the natural gas industry may cause some distress to coal and other fuel industries. But this is the price which must be paid for continued growth. And it is necessary to pay the price for the sake of the future as well as the present.

So the question facing the Commission in certificate cases is not whether some part of a fuel industry or industries is to be saved. Rather it is a question of whether the Commission, with knowledge of the contribution which natural gas has made to this country's progress, should continue to build for the future as well as the present. It need not heed the special interests that are most vocal on issues of this sort. What it must realize is that a vast host of consumers who had little or nothing to say on the subject at the hearing are depending upon it to raise its sights above narrow considerations to the major interest of the United States.

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be protected and dependable markets assured. A continuation of higher field prices can only mean that pipeline companies and distributors will find their profit margins pinched between higher costs and consumer resistance to price increases.

The essential role of the Commission in this area of the natural gas business is to assure adequate service to the public and to protect consumers, not force or regulate them into using other fuels against their will. The coal industry, like any other industry, must face and solve every problem in its field. It must also recognize natural gas as one competitor among others and find its proper role in the total fuel supply picture. "The Natural Gas Act does not confer authority upon the Commission to promulgate a national fuels policy, or to assign 'zones of influence of operation' to natural gas or to any other fuels. The Commission's jurisdictional orbit is delineated by the requirements of public convenience and necessity." *Scranton-Spring Brook Water Co.*, 17 F.P.C. 25, 35; affirmed, 17 F.P.C. 38.

## DEFENDANT'S EXHIBIT 4

## THE UNITED ELECTRIC COAL COMPANIES

307 North Michigan Avenue

Chicago 1, Illinois

July 1, 1958

Mr. Frank Nugent, President  
Freeman Coal Mining Corporation  
300 West Washington Street  
Chicago 6, Illinois

Dear Frank:

I spoke to you last night about an acreage of No. 9 seam coal controlled by Edwin Ruby and his associates in the Hopkins County Coal Company.

In 1954 he had Mr. Davis Read make a report on this acreage, copy of which I am enclosing, and after it has served your purpose, will you please return it to me.

At that time we were considering mining the No. 11 and No. 9 seams at the same time and using the washing plant to handle both coals on two shifts. However, the market was not such that we could justify two-shift production and the No. 11 seam strip coal controlled by Ruby will be exhausted in another year or eighteen months.

They are not underground people and hesitate to make the necessary investment to mine this underground coal. The tippie and washing plant, of course, is right on the property and could be purchased by anyone interested on a very reasonable basis. The reserves they control approximate six million tons and the cost estimate made by Mr. Read in 1954 would have to be revised to current wage rates.

We receive reports from the Kentucky Coal Agency on production and realization. For the calendar year 1957, washed No. 9 coal shows a realization of \$3.5567 per ton. I am sure, however, that all companies did not report. The total reported shows 1,799,415 tons whereas the

total production of No. 9 washed coal, including Ken, DeKoven, Uniontown and West Kentucky Coal Company's properties, was about five million tons. The realization figure named, however, would be somewhat of a guide as to expectation as to return for the coal.

I thought you might be interested in looking over Mr. Read's report and later we might discuss it if the matter appears desirable.

Yours very truly,

/s/ J. M. Morris

EW.



## DEFENDANT'S EXHIBIT 5

July 11, 1958

Mr. F. F. Kolbe:

I am attaching a memorandum I asked Mr. Latimer to prepare on a *possible deep coal field in and around DuQuoin*. This field, marked in orange on the attached map, as far as we know has not been taken up. You can see from the drill holes on the north line of the Beaucoup field that the coal is running from 6½' to 8' in thickness.

Tom has explained in his letter what it might cost to pick up a field of this type, and I am wondering if we shouldn't give some consideration to adding to our reserves for at least the next five years. Five thousand acres would be carried for five years for \$5,000 an acre.

This area, of course, is north and east of Pineyville and about north of DuQuoin.

/s/ R. J. Hepburn

RJH:J  
Attach.

July 11th  
1958

Mr. R. J. Hepburn

*Deep Coal Reserves in Southern Illinois*

As we are all aware, during the past few years practically all of the underground reserves of coal in a band several miles wide, from Belleville southeast to DuQuoin have been tied up by Peabody, Truax-Traer, Ayrshire and the Beaucoup Field. This coal is all tributary to the St. Louis & Belleville, M.P., O.M. & O. and I.C. railroads and the Kaskaskia, Big Muddy and Beaucoup canal projects.

Northeast, East and Southeast of DuQuoin, most of the known reserves of easily workable coal are also in the hands of operators with the exception of certain comparatively small blocks which are not too desirable for various reasons. There are few places left in this area tributary to the proposed canals, but immediately adjoining the Beaucoup Field on the North there is apparently a block of coal consisting of about 100 square miles of #6 coal unbroken by any known cutouts. Of course, only drilling can prove it, but there could easily be 640,000,000 tons in Place in this area, which is shown on the attached map.

This coal is rather sketchily proven by a line of drill holes across the North portion of the Beaucoup Field on the South. This line shows coal running from 5' 1" to 8' in thickness, under from 172' to 233' of cover. The altitude of the coal seam varies from 251' to 293'. At the Northwest corner of the tract at Nashville, the old Clemison mine operated in an average of about 6' of coal at a depth of 407', coal altitude 101'. At the Northeast corner at Ashley #3, 5' thick was mined at a depth of 492', coal altitude 52'. At Dubois, three miles North of the Southeast corner, coal over 6' thick has been mined under 290' of cover, coal altitude 223'. A cut-out runs across the North end of the block from Nashville to Ashley. The dip of the coal from South to North is quite gentle, perhaps in no case exceeding 25' to the mile. Mining

conditions are, of course, not known definitely due to the lack of drilling, but should be fair to good.

Quality should be about the same as Fidelity.

A mine on the Southern edge of this field would be  $8\frac{1}{2}$  miles North of the Beaucoup canal at Pinekneyville, and a privately owned railroad would have to cross the M.R. and the I.C. Grades would be easy and favorable to the lands most of the distance, and a truck road could be built without any unusual expense.

I believe that a selected area within the above tract could be picked up on options to purchase at \$50.00 per acre, or perhaps slightly higher in some cases. Paying \$1.00 an acre at the time of signing the contract and a like amount each year for not over four years with the final payment coming due at the end of 5. Of course, the shorter the option period the easier it is to obtain contracts. Also, I think it would be well after some drilling has been done to buy a few of the difficult tracts at from \$15.00 to \$25.00 or \$50.00 per acre. This has been done by some of our competitors with good results. Leases from 3¢ to 5¢ per ton will no doubt seem attractive to some of the land owners.

There is a small oil field along the Eastern portion of part of this field and all of those people will want to retain their oil rights.

I would also like to call attention to the Northwestern Railroad holdings over near Staunton on the O. H. & O. I have been told that this coal is not now on the market, but it might be, as it extends to Brighton which is about ten miles from the Illinois River, North of Alton. I do not believe a railroad would be practical to take this coal to the river because of the topography, although a route might be found where a belt line would be practical.

T. H. Latimer

THL/ah

## DEFENDANT'S EXHIBIT 6

August 4, 1958

Mr. Justin Potter  
Kentucky Store and Land Company  
Crofton, Kentucky

Dear Jet:

I appreciate your desire to do something with the Buffalo Creek mine. However, we have so much money invested in it that we do not like to give it up until we have exhausted all our possibilities. In addition to drilling in the neighborhood, we are also trying to work out some machinery layout that would enable us to continue in business. All of these things involve a lot of thought, particularly as the property is so difficult that our solutions are apt to be unorthodox.

In regard to your property adjoining the Jenkins leases, we can not, of course, ask you to hold this until we are able to offer you a firm proposition on it, so it is all right with us for you to go ahead and make the best possible arrangement. I hope, however, that any arrangement you make will not be such as to hurt the property for some later more complete operation.

If you know of anyone who could operate our Buffalo Creek property and has the underground equipment to do it, we would be very willing to talk with them ourselves.

Incidentally, we believe that if a large investment at the present time is justified in Number Six coal, we and West Kentucky Coal Company could make a combined venture a profitable one. I have written to them about this but so far have not heard from them.

Very sincerely yours,

President

## DEFENDANT'S EXHIBIT 7

## WALL STREET JOURNAL

Friday, November 21, 1958

## BUSINESS MILESTONES

**GENERAL DYNAMICS SEEKS  
TO ACQUIRE CHICAGO  
BUILDING SUPPLY FIRM***A WALL STREET JOURNAL News Roundup*

General Dynamics Corp. is dickering to acquire Material Service Corp., a Chicago-based building supply and mining company.

Spokesmen for both concerns said that a possible merger of Material Service into General Dynamics has been under study for several months. They declined to forecast how soon a decision might be reached.

General Dynamics has been striving to build up its civilian business, and a merger with Material Service would mark its entry into the building supply field. General Dynamics is a leading maker of aircraft, submarines, missiles, and other defense products.

Material Service is controlled by Chicago industrialist Henry Crown, who owns the Empire State Building in New York and has varied other holdings. He is a vice president, director and member of the executive committee of Hilton Hotels Corp., as well as chairman of Material Service.

The Chicago company quarries limestone and produces sand, gravel, lime, concrete and aggregate, and mines coal. Its properties are located in Illinois, Indiana, Missouri and Utah. The concern also operates barges and towboats and holds about 25% interest in United Electric Coal Co.

Material Service earned \$7,142,166, equal to \$93.31 a share, on net sales of \$103,405,938 in 1957. Its stock



is traded over-the-counter and it had 150 stockholders and 76,543 shares outstanding at the end of 1957. Assets at last December 31 totaled \$81,457,415.

General Dynamics earned \$44,278,763, or \$4.80 a common share, on net sales of \$1,562,538,900 in 1957. For the nine months ended September 30, the company earned \$28,740,152, or \$2.92 a common share, on consolidated sales of \$1,153,498,834. Assets at last December 31 were \$570,604,595.

"Should anything develop as a result of current discussions," General Dynamics said, "no change in personnel or conduct of business of Material Service Corp. is contemplated."

## DEFENDANT'S EXHIBIT 8

GEO. ROBERT BOLLER  
Suite 1090 - 407 South Dearborn Street  
Chicago 5, Illinois • WAbash 2-8239

*Management Consultant*

December 11, 1958

Mr. F. F. Kolbe, President  
United Electric Coal Company  
307 North Michigan Avenue  
Chicago, Illinois

Dear Mr. Kolbe:

The enclosed brochure on the Norris City, Illinois coal mining properties is submitted to you for the purpose of allowing your company to determine its interest in the purchase of the property.

This mine as well as the long term coal rights have been owned by my father for a number of years. He formerly owned a number of mines but has not been active in the mining business for many years. Because of his age it seems far more desirable for him to consider the sale of the property rather than to attempt to reopen the mine himself.

My father would consider a cash sale or an arrangement based on stock ownership in your company or possibly a minimum annual installment sale payment if it appears to be mutually advantageous.

I would appreciate your comments as to your company's potential interest in the acquisition of these extensive coal reserves.

Very truly yours,

/s/ Geo. Robert Boller  
GEO. ROBERT BOLLER

May 4, 1959

Mr. Geo. Robert Boller  
Suite 1090  
407 South Dearborn Street  
Chicago 5, Illinois

Dear Mr. Boller:

As you requested on May 10, we are returning to you the brochure on Norris City, Illinois coal mining properties, which you submitted to Mr. Kolbe in December.

Mr. Kolbe has asked me to thank you very much for giving United Electric the opportunity to consider these properties, and to tell you that at this time our work is entirely in the strip mining field, so we have no present place for this kind of mining in our operations.

I regret that it has taken so long for me to locate this brochure for you.

Sincerely,

Secretary to Mr. Kolbe

PAM  
mf

Very truly yours,  
Geo. Robert Boller  
Geo. Robert Boller

## DEFENDANT'S EXHIBIT 9

February 5, 1959

Mr. Frank F. Kolbe, President  
The United Electric Coal Companies  
307 North Michigan Avenue  
Chicago 1, Illinois

Dear Frank:

We have your proposed plan for Buffalo Creek, and it appears that the entire project revolves around the question as to whether or not you can maintain a price of \$6.25 for #6 seam coal, and if that is possible, that your net earnings for the next ten years will range from \$1.00 to \$1.32 a ton. I question very much that a \$6.25 realization can be maintained on #6 seam coal in face of a declining market for premium grade household stoker coal.

Yours very truly,

FREEMAN COAL MINING  
CORPORATION  
FRANK NUGENT  
President

FN/or

## DEFENDANT'S EXHIBIT 11

May 27, 1959  
(Dictated 5/26)

Mr. F. F. Kolbe:

Mr. Inman has given Mr. Utterback some figures on the *Industry field*.

We control a little over 3,000 acres, 2,500 of which are coal acres, giving us approximately nine million tons of coal. We feel that in our immediate area south and east of us there would be another 2,000 acres containing seven million tons. The ratio, however, would be from 30-35 to 1. We don't feel that this coal is continuous but somewhat like our present Buckheart field. I don't believe anyone will bother the tonnage in this area. However, with ratios of 35-40 to 1, I think this coal would run on southeast practically to Rushville. On the west and north a cutout appears which might be four or five miles in width, and the coal picks up again around Augusta.

We will explore this field to see what we can put together, but I do feel that we can figure on an additional seven million tons at our present location.

RJH:J

R. J. HEPBURN



## DEFENDANT'S EXHIBIT 12

PAUL WEIR COMPANY

INCORPORATED

MINING ENGINEERS AND GEOLOGISTS

DESIGN AND CONSTRUCTION

October 2, 1959

Mr. Frank F. Kolbe, President  
The United Electric Coal Companies  
307 North Michigan Avenue  
Chicago 1, Illinois

Dear Mr. Kolbe:

Before giving you our preliminary opinion in summary form on values of plant, equipment and recoverable coal reserves at active operations, also on values of recoverable coal reserves at inactive properties, we define what the values we assign to active properties represent.

The "value" of an active coal mine property, exclusive of salvage value, is that amount on which from the aggregate net cash generation (after-tax income plus depreciation plus sustained depletion less assumed cost of working capital less estimated necessary reinvestment in plant, equipment and coal reserves) there can be provided an adequate annual rate of interest return and have remaining from such net cash generation an amount which if invested at the end of each year to return the same adequate annual rate of interest will in the aggregate during the life of the recoverable coal reserves equal the "value". The salvage value to be added is the present worth of the estimated salvage value at the end of operations, discounted at the same adequate annual rate of interest.

Stated differently, we can consider the "value" to equal that principal amount of "borrowed money" that can be repaid with an adequate interest return out of the aggregate of net cash generation during the life of the recoverable coal reserves by applying the annual cash

generation at the end of each year, first, to interest on the unpaid balance of the principal and, second, to the reduction of the unpaid balance of the principal amount.

In estimating the after-tax income, no credit is taken for interest paid on borrowed money. The values are arrived at independently of the financing.

The "adequate" rate of interest return that we employ is ten percent annually. We believe that under present conditions and considering the risks inherent in coal mining, this is reasonable.

Unless otherwise noted, the assigned values are as of December 31, 1958.

### ACTIVE MINES

#### *Buckheart*

Plant, Equipment and Coal Reserves, including Railroad and River Terminal	\$7,042,490
Present worth of Estimated Salvage Value	158,272
	<hr/>
	7,200,762
Depreciated book values 12/31/1958, Plant, Equipment and Coal Reserves	5,140,875
	<hr/>
Appreciation	\$2,059,887
Future stripping ratio 14:1	

#### *Cuba*

Plant, Equipment and Coal Reserves, including new Kolbe Wheel	\$3,319,353
Present worth of Estimated Salvage Value	718,424
	<hr/>
	4,037,777
Depreciated book values 12/31/1958, Plant, Equipment and Coal Reserves	1,259,111
New Kolbe Wheel	1,887,000
	<hr/>
	\$3,146,111
Appreciation	\$ 891,666
Future stripping ratio 18:1	

#### *Fidelity*

Plant, Equipment and Coal Reserves	\$3,966,819
Present worth of Estimated Salvage Value	46,150
	<hr/>
	\$4,012,969

Depreciated book values 12/31/1958, Plant,  
Equipment and Coal Reserves  
(including Clinch)

\$4,016,765

Future stripping ratio 10:1

### *Mary Moore*

As of December 31, 1958 the estimated recoverable coal reserves were 538,000 tons. As of July 31, 1958 the depreciated investment in plant and equipment was \$428,927. As of December 31, 1958 this had decreased to approximately \$393,534. The depleted investment in coal rights as of that date was \$25,781. The cash generation from the remaining two years of operations subsequent to December 31, 1958 should be sufficient to extinguish the investment accounts, probably with a small overplus.

Plant, Equipment and Coal Reserves	\$467,495
Present worth of Estimated Salvage Value	150,262
	<hr/>
	617,757
Depreciated book value 12/31/1958, Plant Equipment and Coal Reserves	\$419,315
Appreciation	<hr/>
	\$198,442

### INACTIVE COAL RESERVES

The value of inactive coal reserves may be determined in one of several ways. If the quantity of contiguous recoverable coal reserves in an area is sufficient to provide for the development of a mine, the value is the present worth of the probable value per ton at time development fits into a planned schedule. United Electric has three such areas or fields, namely, North Canton, Glasford-Banner and Industry-McDonough County. We will consider these separately.

#### *North Canton*

The extent of this field, which is No. 6 coal with an estimated overburden ratio of 16:1, is substantial. As of December 31, 1958 United Electric owned in fee and/or held under contract an estimated 8,231,630 tons of re-

coverable coal. The acquisition cost is \$1,185,368. This represents a per-ton cost of \$0.1440. From our studies of results from Buckheart and Cuba, we have concluded that at these two active operations coal reserves have a present value of approximately \$0.20 per ton. If these reserves are to be developed as a successor operation to Cuba some six or seven years hence, the carrying charges on \$0.1440 per ton would increase the cost to an amount in excess of \$0.20 per ton. There is a potential of 17,000,000 tons in addition to the reserves presently controlled in this field. The overall size is substantial.

In our opinion, the purchase price of \$0.1440 per ton represents the value as of December 31, 1958.

### *Glasford-Banner*

As of December 31, 1958 United Electric had purchase contracts covering an estimated 3,421,921 tons of recoverable coal in this field in which the total quantity recoverable from the two seams is estimated to approximate 17,000,000 tons. As of the same date an additional estimated 912,079 tons were held under lease. The coal from this field has an added value because the inherent quality is superior to that of Fulton County No. 5 and No. 6 coals. Additionally, the field is located along the Illinois River. The cleaned coal can be loaded into barges directly from the preparation plant. However, the two seams, one underlying the other, are thin and the overburden ratio is estimated to be 17:1.

We have studied the reports prepared by United Electric's staff, dated April 23, 1959. We note that the projected total costs are approximately equal to present total costs at Buckheart, Cuba and Fidelity. We note also that the projected sales realization is \$5.27 per ton and, further, that the projected net after tax profit is \$1.17 per ton. Such a profit represents in excess of a 40 percent return on invested capital. Also it represents in excess of 22 percent of the sales realization. The sales realization of Buckheart coal for the fiscal year 1959 was \$4.45 per ton. This approximates the realization per ton f.o.b. barges.

The analyses of clean coal presented in the report show a moisture content that appears to us to be less than that of the inherent or bed moisture although no thermal drying is proposed for the projected preparation plant.

The production and marketing of this coal presents special problems. The projections in the staff report are, in our opinion, on the very optimistic side in spite of the several advantageous factors. Further, we would expect actual results to be closer to those at Buckheart than those projected.

Our opinion of the present value of the coal reserves owned in fee as of December 31, 1958 is \$0.30 per ton. This assumes immediate development. The coal reserves leased at a royalty rate of \$0.25 per ton have an overriding value of approximately \$0.10 per ton at time of mining. The present value would be the \$0.10 per ton discounted at 10 percent for the number of years that elapse until the leased coal is recovered.

### *Industry-McDonough County*

As of December 31, 1958, United Electric owned in fee and held under purchase contract a total of 8,976,117 tons of strippable coal reserves in this field. The seam is the Illinois No. 2 with a thickness of approximately 28 inches. The stripping ratio on the reserves as of December 31, 1958 approximates 21:1. United Electric's engineers advise that there are an additional 7,000,000 tons available at a ratio of approximately 30:1. The consideration for the holdings was \$597,250. This represents an average cost of \$0.0665 per ton.

We are not informed on the probable time of development of this field. However, we do have a United Electric staff report dated July 1959 in which projections are made and estimates presented. These estimates are similar to those prepared for Glasford-Banner.

The two advantageous factors that prevail at Glasford-Banner are present in the Industry field but have a lesser value. These are the better quality of coal than that of Fulton County No. 5, although the quality is probably not as high as that of Glasford-Banner. The



location of the field is substantially further from the Illinois River than is Buckheart.

The adverse factor in this field is the stripping ratio of 25:1 and probably as much as 30:1. There are two fields in the tri-state district of Illinois-Indiana-West Kentucky in which stripping is carried on with a stripping ratio of approximately 20:1. One is in the thin coal fields of Northern Illinois and the other is in the Linton-Sullivan field in Indiana. The Northern Illinois operations are economically successful because of geographical location in respect to markets. Those in the Linton-Sullivan field are of a marginal nature. We are of the opinion that the development of the Industry field as of the present would be unprofitable. However, a decade hence the chances for a profitable development would be much improved.

In our opinion, the purchase price of \$0.0665 per ton represents the value as of December 31, 1958.

#### *Gayle and Clinch*

We considered the Clinch coal reserves to be part of those assigned to Fidelity and their book value is included in the Fidelity book value.

United Electric has a substantial investment in the estimated 1,714,710 tons of recoverable coal reserves designated as Gayle. This is an isolated area with a probable stripping ratio of 9:1. Of the total reserves, 785,773 tons, the book value of which is \$145,886, is owned in fee. This amounts to \$0.186 per ton. The remainder of the reserves are leased at a royalty rate of \$0.05 per ton. No special value attaches to the Gayle reserves. On the contrary, they have a lesser value than those at Fidelity because of the isolation. We are of the opinion that the present value of the total is \$72,000.

#### *Le Plore*

The estimated 2,301,872 tons in this field were purchased for \$45,125. Based on our familiarity with the Eastern Oklahoma area, we are of the opinion that the value is represented by the purchase price of \$45,125.

The coal is not of metallurgical grade. The quantity of strippable coal available in the area is probably insufficient for an economical development.

### *West Kentucky*

Included under this designation are coal reserves at Buffalo Creek No. 2, strip and underground, and underground reserves at Mine No. 21. Active operations have been and/or are being abandoned because of the limitations of existing uncovering equipment when working in a stripping ratio of 21:1. The coal reserves considered to be recoverable by stripping with suitable equipment are estimated to be 2,500,000 tons. The coal reserves recoverable by underground mining are estimated to be approximately 10,000,000 tons. Only approximately 4 percent of the total is owned in fee. The remainder is held under lease. The value of the holdings as of December 31, 1958 is nominal. The depreciated book value of plant and equipment at Mines Nos. 19 and 21 as of December 31, 1958 was \$218,757. In our opinion, this amount represents a reasonable salvage value of plant and equipment.

### *Southern Illinois*

#### *Underground*

These coal reserves formerly owned by Union Electric Company consist of an estimated 551,800 tons owned in fee and 4,562,380 tons held under lease. The value of these reserves is nominal.

### **SUMMARY**

Our present effort is confined to giving you our considered opinion on value of major magnitude. Certainly there are miscellaneous items such as office furniture and equipment, automobiles used by administrative officers and salesmen, odd pieces of surface lands not connected with active operations, farm lands, etc. The total value of these is small in relation to the active properties.

We have built up a very considerable amount of data that has been used as the basis for our values. After you have reviewed this letter, we will be glad to discuss in detail any questions you may have.

Respectfully submitted,

/s/ Paul Weir

PW:L

## DEFENDANT'S EXHIBIT 13

May 27th  
1960

Mr. R. J. Hepburn

In regard to acquiring coal lands near our own property, I would like to point out to you two of our most serious past errors, of which you may not be completely aware.

In 1939 and 1940, George Campbell of Old Ben, had practically everything at Cuba north of Slug Run under option. This went far enough with them to thoroughly drill, survey, and stake out their railroad yard and tippie. The options were dropped even though they were extended for a few months. Our officials were only vaguely aware of this. When they were finally dropped, one of the land owners wrote in to us and asked us to come in. We did this despite the opposition of the then head of the operating department. Every ton we have mined at Cuba since January 1, 1946 and all we have left was either under option to them or blocked off from us. We also turned down the entire Morgan Coal Company field which they had required due to the stupidity of our then superintendent. All of this except a few thousand tons was under 40' or less of overburden.

In the 40's our lack of aggression placed us in trouble at Buckheart. Ayrshire came in and acquired 8,500,000 tons. We had been approached by two real estate men in Canton, Carver and Orendorff, who were working with John Organ who had drilled the area for [Illegible] Collieries. They wanted a \$40,000 fee for taking up the options, and the total cost would have been \$450,000.00. No contract was made and we made no serious attempt to secure options until after Ayrshire started working. Certain of these were dropped even then because of lack of solid coal. Among those drilled and dropped were Floyd Shelby, Fluke, Tendick, Woods, and Sharron McLouth. We were practically cut off from our holdings in the north area except for a right-of-way. We acquired the Orendorff property by out bidding Ayrshire. The

ownership in the field then made a settlement necessary. We acquired their 8,500,000 tons in 1948 for \$1,800,-000.00 plus royalty on one property. Had we not out bid them for Orendorff, we would not have had an operation north of the entrance road to the mine, with the exception of the Seebree and Spenny proportion and they would have acquired the rest of the north area.

### T. H. LATIMER

THL/ah



## DEFENDANT'S EXHIBIT 14

cc: Mr. T. C. Tarzy  
Mr. E. C. Butler

August 23, 1960

Mr. C. Evans Parks, Vice President  
Iowa Southern Utilities Company  
Centerville, Iowa

Dear Mr. Parks:

It was very nice to have an opportunity of meeting you yesterday and we do appreciate the courtesy and consideration shown us. I wish you would convey our thanks to Mr. Shutts, Mr. Mann and Mr. McLeod.

First, I have started some investigation into the possibility of underground mining in line with your interest in this, as well as other utility buyers and the committee appointed by your Governor. I can readily realize the importance to the State of Iowa and to communities to develop this industry as a help to the economy of the State as well as utility companies operating in Iowa.

If it appears that underground mining is economically feasible, I am sure we would be interested, with our related company, as outlined in our conversation.

You asked me to send you some typical long-term contract agreements, which I am including herewith. These are listed as follows:

1. Standard Coal Contract
2. Agreement with Union Electric Company
3. Agreement with Commonwealth Edison Company
4. Agreement with Wisconsin Power and Light Company

No. 1 is a standard form developed by the National Purchasing Agents Association, various coal-buying executives and representatives of the coal industry. This is used except where some special situation exists and the Buyer prefers to have his own legal department draw up the contract.

No. 2 is an agreement between Union Electric Company, Buyer and Truax-Traer Coal Company and our com-

pany, Sellers. This one, I believe, is self-explanatory and a study of it will disclose the provisions for escalation, renegotiation and gross inequities that might develop over the period of the contract.

No. 3, as indicated, is an agreement with Commonwealth Edison Company and covers the required escalation provisions in a somewhat different manner than No. 2.

No. 4 is an agreement with Wisconsin Power and Light Company and again the escalation provision follows a somewhat different pattern.

Prices have been deleted, as we feel our customers would prefer that this information should only be disclosed by them.

You understand that these contracts cover coal that is being produced by mines that were already in existence and had been operating for some time. In other words, investments had been made, the acreage was available and we had the productive capacity already installed and were looking forward to a place to sell the coal.

In considering a completely new operation, we would of course want a backlog of tonnage assured before making the investment and I am sure that in discussion we could develop the type of contract that would be acceptable to both you, the Buyer and our company, the Seller.

We are particularly interested in providing a dependable source of supply at a fair price to you, having in mind that if underground mining does not prove feasible, sometime in the future—with the utility growth in your State—coal from Illinois may become attractive to you, particularly for a guaranteed, adequate source of supply.

We will continue our efforts to develop strip mining in Iowa in locations that could serve your plants and certainly will keep you informed of anything that we may find.

Thank you for your time and courtesy and I hope to see you again before too long.

With kindest regards,

Yours very truly,

JMM:MW

## DEFENDANT'S EXHIBIT 15

September 7, 1960

Mr. H. L. Mann, President  
Iowa Southern Utilities Company  
Centerville, Iowa

Dear Mr. Mann:

I did not forget about our discussion concerning the Iowa coal situation when we had our visit the latter part of August.

You will recall I mentioned the close association between our Company and the Freeman Coal Mining Company, which is a Division of General Dynamics Corporation. We operate only strip mines and have no experience or organization familiar with underground mining. Freeman, however, is one of the most successful companies in the Midwest operating underground coal mines.

I know your interest in developing coal in Iowa if at all possible, and this probably would mean serious consideration of underground mining. I have discussed this with the President, Mr. Frank Nugent, of the Freeman Company.

Some years ago they made a study of some coal lands owned by the Rock Island Railroad and at that time decided the roof and other conditions made the proposition uninteresting to them. A lot of changes have occurred, of course, in the past few years in both underground and strip mining methods. Freeman would be glad to send one of their engineers out to look the field over again if you think it desirable.

I would be glad to hear from you in this regard and will be governed by your wishes in the matter.

We are still investigating the possibility of stripping some coal on a small scale, and as this progresses, I will be glad to report to you.

With kindest regards,

Yours very truly, HLM: MTH

JMM:J

cc: Mr. C. E. Parks, Vice President

## DEFENDANT'S EXHIBIT 16

## IOWA SOUTHERN UTILITIES COMPANY

Centerville, Iowa

September 13, 1960

Mr. J. M. Morris, President  
The United Electric Coal Companies  
307 North Michigan Avenue  
Chicago 1, Illinois

Dear Mr. Morris:

I have delayed answering your letter of September 9 to get some additional information.

Before your visit to Centerville, we had tentatively arranged to have mining consultants examine the Centerville coal veins and give us a report on the possible investment and operating cost which would include the washing process. They were also to express their opinion on feasibility of mining this coal for the potential market.

I believe we could accomplish more in discussing this field with a representative of the Freeman Company after this report is available. The consultant will have their representative make his investigation the week of September 19 and we expect the report in our hands about October 1.

I will advise you when the report is available and we can then try to arrange a date for the representative of the Freeman Company to visit with us.

Sincerely yours,

/s/ H. L. Mann  
President

HLM:MH

## DEFENDANT'S EXHIBIT 17

CC: MR. R. J. HEPBURN  
MR. T. J. TARZY

November 15, 1961

Mr. H. L. Mann, President  
Iowa Southern Utilities Company  
Centerville, Iowa

Dear Mr. Mann:

As you know, since our meeting here in our office several months ago, the Freeman Coal Mining Corporation and our company have continued to investigate the possibility of a mine in Iowa.

Trying to put together enough acreage of strippable coal that could be mined economically seemed extremely difficult. Then we began to consider the possibility of a combination of strip and underground production.

At a meeting of the two companies today, it was decided to pursue this idea and I thought you would be interested in knowing that we are still hopeful that something can be accomplished.

We will assign people from both companies to do some more drilling and investigating and I hope that some time before too long, I can pay you a visit. In the meantime I wanted you to know we are still working on this matter.

With kindest regards,

Sincerely,

JHM:EW



June 12, 1962

Mr. J. N. Morris

Re: Preliminary Report  
Sunshine Coal Property  
Centerville, Iowa

While we still have to have another visit with Freeman for a final report on the underground and/or punch mining and stripping at Centerville, I thought I would give you a preliminary report.

Sunshine seems interested mostly when we talk about their property for power coal and also coal on their railroad. Keeping this in mind, there could be in this area nine to ten million tons of deep coal, of which approximately eight million would be deep mine and one million strippable. Part of this strip does not lie too far from the previous strip area that we looked at which contains 2 1/2 million tons of coal.

This report is based on information we have obtained from Sunshine and their merger drilling records.

All of these tons would have to be proven by new drilling. Our idea would be to do some drilling to first prove the tons and then further drilling to be able to properly mine it.

In the statement below where we say three million tons of finished coal could be put together in one location, this three million tons includes about one half million on which

we would have a two mile deadhead and the other 2 1/2 million is the drilled area we located previously. The 4,100,000-ton reserve mentioned in the last paragraph is without the stripping of approximately one million tons that are on the Sunshine property. These figures can all be cleaned up when we have a combined report.

SUNSHINE COAL COMPANY PROPERTY  
NEAR CENTERVILLE, IOWA

During our recent visit to Centerville we concentrated on the properties controlled (deep reserve leases) by the Sunshine Coal Company. Sunshine controls some 2,830 acres and can obtain an additional 760 acres. Their drilling in the area went from 10 feet of cover to 154 feet; however, the locations of these drillings were not definite enough for strip purposes. The main impression obtained from drilling was the fact that this coal dips from the outcrop in something like 4% - that is, 40 feet down per 1,000 foot horizontal distance. Assuming that the hills rise at 3% grade, the overburden depth will increase 40 feet some 550 feet from the edge of the hills, meaning that with little or no bottom land our contour stripping will progress some 500 to 600 feet into the hillside. At this point stripping with a shovel approaches the economical limit and punch mining will begin.

The Sunshine property supposedly has outcrops on the south side about 1-1/3 miles long and on the north 1 mile long - this being adjacent to some 4-1/2 miles of outcrop located by United's previous drilling in the area. The south outcrop is some 2 to 2-1/2 miles from the main or north outcrop. With additional drilling and using what areas were previously considered with the Sunshine property, about 3,000,000 tons of finished coal could be put together in one location. To prove this immediate area for stripping would require 100 to 150 drill holes at a cost of about \$7,500 to \$10,000. Any additional areas of drilling would be an added cost.

We have considered three different types of stripping equipment: a 6-yard dragline, a 18-yard dragline, and a 35-yard shovel. The following is a breakdown of the production that could be expected from these machines at 40 feet of cover.

	<u>6-Yard Dragline</u>	<u>12-Yard Dragline</u>	<u>35-Yard Shovel</u>
Monthly Production - Yards	100,000	250,000	760,000
Ratio	18.5	18.5	18.5
Monthly Production - Tons	5,400	13,500	41,200**
Yearly Production - Tons	61,000	159,000	465,000
Daily Production - Tons (200 days/year)	305	765	2,320
Estimated Cost per Ton	\$4.06*	\$4.06	\$3.25

\* This cost could be 25¢ to 50¢ low due to the low production.

\*\* This tonnage could be reduced to 29,000 tons on a 5-day week, or 330,000 tons yearly, if so required.

Another possibility for this field would be to open the outcrop strictly for punch mining with a 6-yard dragline. This cost would be approximately \$2.80 a ton. This would necessitate a small machine to enable a productive punch mining operation to fulfill the demand requirements. United would produce in this (Sunshine) area approximately a total of 100,000 tons, and due to low cover at outcrop the machine is capable of doing this work in ten months on a 24-hour, 7-day week.

At this point I think it should be pointed out that of the Sunshine property (2,830+760) 3,590 acres controlled for deep mining, we will by strip and punch mining recover only approximately 1/2 of the total coal reserves.

Relative to the punch mining by Freeman Coal, it is being considered presently on a 1/2 mile penetration with a recovery or yield similar to the stripping operation which, adhering to the Sunshine property, would have a reserve of 2,800,000 tons, and if the adjacent area was included, an additional 1,300,000 tons could be mined for a total of 4,100,000 tons reserve. Mr. C. Sanford (Freeman) stated that one unit would produce about 250 tons per shift, or 500 tons on a 2-shift operation, or 100,000 tons yearly.

R. J. Hepburn

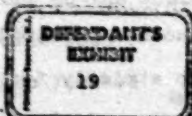
RJH:IJ

cc: Mr. R. H. Inman



## IOWA SOUTHERN UTILITIES COMPANY

300 SHERIDAN AVENUE, CENTERVILLE, IOWA



OFFICE OF THE CHAIRMAN

November 30, 1962

*Exhibit 19*  
*How good*  
*feature & with*  
*to be your*  
*best and*  
*afford*

Mr. Robert J. Hepburn, Vice President  
 The United Electric Coal Companies  
 307 North Michigan Avenue  
 Chicago 1, Illinois

Dear Mr. Hepburn:

We have been studying our coal situation. There has been delay because there are a number of developments that had to be looked into. Our study indicates we have very little concern about an adequate coal supply for at least five years. Some of our people think ten years' supply for present operations will be available. The other companies in our area think a good supply of interruptible gas will be available for a long time in the future. Delay in getting agreement on Iowa Power Pool ultimate plan makes the future market for coal uncertain.

With the reasonably assured supply, our study indicates we would raise our fuel cost over an extended period before we would need a ten-year reserve contract.

Our present cost average is \$4.31 f.o.b. Bridgeport with \$1.14 freight rate. We have an average Btu value on our purchases of raw coal of 9,700. This makes our f.o.b. Bridgeport cost 22.2% per million Btu.

A \$4.70 f.o.b. Bridgeport price would raise our cost per million Btu to 24.2% and increase our annual cost for 150,000 tons by \$58,500.

A \$5.00 per ton f.o.b. Bridgeport price would increase our cost, based on 9,700 Btu raw coal, to 25.8% per million and our annual cost on 150,000 tons would go up \$104,000 annually.

In view of the study results indicating no immediate shortage of supply, we can't justify costs above our 22.2% per million f.o.b. Bridgeport at this time.

The recent developments and uncertain future market would indicate that we should not, at this time, expect your company to develop the Appanoose County coal field at the prices we feel we can afford.



We will be glad to discuss this whole matter with you if you care to pursue it further.

Mr. Mann has not been able to hire the kind of person he wants to help him so the lease project has not progressed.

Sincerely yours,

HLM:KH

*H. L. Mann*

H. L. Mann  
Chairman

## DEFENDANT'S EXHIBIT 20

December 10, 1962

Mr. H. L. Mann, Chairman  
Iowa Southern Utilities Company  
300 Sheridan Avenue  
Centerville, Iowa

Dear Mr. Mann:

I wish to acknowledge your letter of November 30. I would have answered you a little sooner but I have been out of the office.

I was deeply concerned about the thought of a good supply of interruptible gas becoming available in your area. While we had talked about this in the past, you did not show much thought that this would be available in quantities sufficient for your power supply. Of course, we do not feel that we could mine coal in this area and compete with gas costs.

It possibly is true that you will have a coal supply for five to ten years. No doubt it will be a little hard at this time to estimate the exact price per ton, or cost per million B.T.U.'s. However, we are interested in this area and feel that we should again pick up more options and do some drilling so that we can determine a cost figure. If under these conditions you feel that you could favor us with coal business if we can be on a competitive basis with other coal prices, we still would like to go ahead with our drilling program and our optioning program with Mr. Ham. If you could indicate that we could be favored with business if we are competitive on this basis, we would like to complete our investigation.

If necessary, we will be glad to come out and visit with you, but perhaps this letter will get us closer together again.

Very truly yours,

Vice President

RJH:IJ

cc: Mr. J. H. Morris  
Mr. R. H. Inman

## DEFENDANT'S EXHIBIT 21

March 8, 1963

Mr. J. H. Aiken  
118 Joplin St.  
Benton, Illinois

Dear Jim:

I wish to acknowledge and thank you for your letter of March 5.

I am very sorry this area in Jackson County turned out the way it did. We have, however, worked very closely with Mr. Nugent and have discussed the strip and also the deep coal possibilities. I am, therefore, returning the maps you sent us, which you asked that we send back to you.

I hope that some day in the near future I can stop in and have a little visit with you.

Best of luck to you and your family.

Very truly yours,

/s/ R. J. Hepburn  
R. J. HEPBURN

RJH:IJ  
Encs. 3

cc: Mr. J. M. Morris  
Mr. R. H. Inman  
Mr. T. H. Latimer

## DEFENDANT'S EXHIBIT 22

May 19, 1964

Mr. Frank Nugent, President  
Freeman Coal Mining Corporation  
A Division of General Dynamics Corporation  
300 West Washington Street  
Chicago 6, Illinois

Dear Frank:

Enclosed is draft of letter to Arch Kraakevik of Illinois Power concerning our present contract on Mary Moore coal for delivery to their Danville station.

Before I send this out, will you please look it over and let me know if it has your approval.

Yours very truly,

THE UNITED ELECTRIC COAL COMPANIES  
307 North Michigan Avenue  
Chicago, Illinois 60601

## DRAFT

Mr. A. Kraakevik, Vice President  
Illinois Power Company  
500 South 27th Street  
Decatur, Illinois

Dear Arch:

This will confirm conversation with you in your office on Friday, May 15, concerning coal contract under which we are now shipping from our Mary Moore Mine to your Vermilion Station near Danville, Illinois.

The present contract became effective July 16, 1962, with an expiration date of July 15, 1966. This provided for delivery of 960,000 tons, plus or minus 10%. It was

expected that the land acquired by us would yield about this much tonnage and would be mined out about the approximate date of the contract indicated above. We now know that due to certain unforeseen conditions, at our current rate of production, all of the coal in the present working area will be exhausted by the end of December of this year. As of that date, the contract will still have about eighteen months to go and we will be short approximately 250,000 tons under the amount anticipated in the original agreement.

To fill out this tonnage and time under the present agreement, we propose to supply coal from the Freeman Coal Mining Corporation's Orient No. 5 Mine. This will be raw mine run crushed to a 3" top size through a Bradford breaker, and will analyze approximately 11,100 BTU as received and 15% ash on a dry basis.

The present delivered cost per million BTU's on the Mary Moore coal prior to the effect of the changed labor scale on April 2, 1964 was 21.51¢. The Freeman coal would be delivered to you on this basis, plus the amount per ton finally agreed upon under the escalation clause covering the change in the UMWA contract.

This will protect you, both as to tonnage and price, for the balance of the contract period, and during that time we will continue to inform you of any coal lands that we may acquire in the Danville area which would provide any additional tonnage in that field. We understand, however, that we are to make no land acquisitions without consultation with you as to any future mining for delivery of coal to you.

I understand the above has your approval and we have asked Freeman to confirm the arrangement by letter to you.

Yours very truly,



## DEFENDANT'S EXHIBIT 23

## MEMORANDUM

from

IRVING CROWN

DATE

4/16

Frank

I note all comments  
are bulleted on futures.

No limit that  
we are reaching  
end of line on  
reserve replacements?  
See

# MEMORANDUM

From the desk of

*J. M. Morris*

June 11, 1964

Frank:

Enclosed is a very rough draft of the highlights of last year, which might serve as a guide for what we will say in our Annual Report.

Copy of the Mined-Land Conservation Conference brochure is also enclosed for your information. You will note we are given considerable recognition in the last three or four pages.

After you have looked this over, we can talk about it.

JMM

DRAFTREVIEW OF THE YEAR

Sales of the Company were the highest on record - \$ \_\_\_\_\_ - an increase of 10% (?) over last year. Net income was \$ \_\_\_\_\_, an increase over our previous year of 12% (?).

At the end of our fiscal year 1963, bank loans amounted to \$1,708,199 and all of this was retired during the year ended July 31, 1964.

The dividend rate of \$1.80 per share annually was continued throughout the past year.

Capital Additions

A new heat dryer was installed at the Fidelity Mine and started operating in January of 1964. This dryer removes the excess moisture from the washed coal, increasing the BTU value and avoiding the extreme difficulties of frozen coal in severe winter weather. Prior to the installation of this dryer, our shipments were seriously curtailed during extremely low temperatures and this will now be avoided. The dryer has performed in a very satisfactory manner and completely in accord with our expectations.

We purchased during the past fiscal year two 100-ton haulage trucks to replace worn-out units and this program will be continued as replacement is necessary. The largest trucks we had in use prior to this time were of 50-ton capacity, with some smaller units. We expect greater production and some reduction in our haulage costs as these larger units are put in service.

Sometimes during the next eighteen months, it will be necessary to move some heavy equipment to a new location at the Cuba Mine, which will involve considerable expense. Also the acreage we are now working at the Mary Moore Mine will be exhausted. This will involve expense in moving the equipment. Mary Moore has been a small producing property and this will not reflect any substantial reduction in earnings.

No other large capital expenditures, except for normal replacement of equipment and for additional coal deposits, are contemplated during the next fiscal year.

Production and Consumption

Tables, with reference to increase in utility consumption, which can be accounted for by one of our larger utility customers.

Coal DepositsOrganization Changes

None 7777

General Dynamics Corporation now owns \_\_\_\_\_ shares, or \_\_\_\_% of the outstanding common stock of the Company.

Change in Fiscal Year

For some time it has appeared desirable to change our fiscal year end from July 31 to December 31. This will make it easier to compare results of the Company with those of other coal producers and industries. Approval of the change was authorized by the Board of Directors during the fiscal year. The interim statement for the five-months period ending December 31, 1964 will be sent to our shareholders and also incorporated in our Annual Report for the calendar year 1965, which also will be our fiscal year.

DRAFTPRESIDENT'S LETTER TO SHAREHOLDERS

As you will see from the following pages, 1964 was a very good year for your Company. Unusually favorable weather and good operating conditions at all of our mining properties contributed substantially to the results. Increased sales to our customers, particularly one of our larger utility users, made it possible to produce a record 5, , tons. More complete details of the year's accomplishments are described under "Review of the Year".

We continue wherever possible to reclaim land which has been mined and put it to the use for which it is best adapted. Pictures in this report show some of the recreational facilities that have been established and are being used. Most of the responsible strip coal mine operators are doing this. The enclosed brochure produced by the Mined-Land Conservation Conference shows the variety and extent of activities in this direction in many States. Our Company is a member of the Conference and contributes both time and money as well as the talents of our organization to its work.

All of our properties are currently producing close to capacity and we continue to view with optimism the future of the coal industry.

We have always had the sincere and full cooperation of our entire organization and we are grateful to our shareholders, members of the Board of Directors and all employees for their interest and efforts on behalf of the Company.



## DEFENDANT'S EXHIBIT 24

June 29, 1965

MR. T. J. TARZY  
MR. J. T. MURRAY  
MR. R. H. INMAN

In reviewing our property in the Industry field, we apparently have about \$845,000 already paid, with remaining liability on purchase contracts of \$56,500. All of this land is owned in fee and the average cost per acre is approximately \$170. Assuming the tonnage is there according to our drilling, this represents \$0.061 per ton.

Our farming apparently is not very productive. Taxes are charged against the farming and last year we lost on farming about \$1,000 more than the taxes on the land.

The value of this coal field is certainly more doubtful than it was when we acquired it, with the changes that have developed in transportation, particularly unit trains.

Possibly we should all give this some thought and sometime soon get together and see if anything should be done about it.

J. M. MORRIS

EW

## THE UNITED ELECTRIC COAL COMPANIES

307 NORTH MICHIGAN AVENUE

CHICAGO, ILLINOIS 60601

October 27, 1965

25

 NATIONAL TRUCKS  
 PUBLICITY  
 CUBA  
 BUREAU OF  
 ROAD REPAIR  
 BARRICA

 BRANCH OFFICES  
 ST. LOUIS, MISSOURI  
 SPRINGFIELD, MISSOURI  
 PEORIA, ILLINOIS  
 COMMERCIAL NATIONAL  
 BANK BLDG.
J. H. MORRIS  
PRESIDENT

Mr. Frank Nugent, President  
 Freeman Coal Mining Corporation  
 A Division of General Dynamics Corporation  
 300 West Washington Street  
 Chicago, Illinois 60606

Dear Frank:

No doubt you kept a copy of report prepared by your Mr. J. H. Matheson, Jr. on cost estimates to try out underground mining at Fidelity. Estimates were as follows on total cost in trucks in the Fidelity pit:

300 Tons per Shift	\$3.077
400 Tons per Shift	\$2.610
500 Tons per Shift	\$2.325

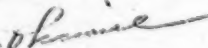
The attached sheet shows costs accrued in trucks in the pit for the periods indicated.

Our fiscal year ended July 31, 1964 was the best in the history of the Company and Fidelity Mine was in very good stripping and operating conditions and achieved a cost of \$1.564 for that period. For the period beginning August 1, 1964 and ended December 31, 1964, you will notice a sharp increase in our total stripping cost from 67.1¢ to 69.0¢, and for the nine months ended September 30, 1965, we again went up sharply due to opening the new Green pit, increase in drilling and blasting, and the necessity for operating two machines while we were developing this new pit.

I think a fair estimate of total cost in trucks is probably around \$1.80 and this compares with the underground estimate, if we assume a middle-of-the-road basis of 400 tons per shift, of \$2.61 in truck. It would appear that a difference of 80¢ per ton is too much to justify trying this method.

We can discuss this further sometime at your convenience.

Yours very truly,



JHM:KJ

Fidelity mine  
Analysis of tests  
to put coal in touch

	Fiscal Year ended 7/31/64	5 Months ended 12/31/65	9 months ended 9/30/65
<u>Shipping Costs</u>			
Drainage	.073	.223	.069
Unloading Overburden-Operation	.090	.115	.139
Maintenance	.046	.095	.056
Blasting Overburden	.182	.181	.252
Shipping Costs-Operation	.120	.129	.192
Maintenance	.079	.094	.101
Other Shipping Costs	.081	.183	.277
<u>Total Shipping Costs</u>	.671	.836	1.184
<u>Other Costs</u>			
cleaning cost	.012	.010	.012
Unloading & Blasting cost	.027	.043	.042
Loading cost-Operation	.091	.091	.098
Maintenance	.026	.017	.022
<u>Total Direct Costs</u>	.787	1.001	1.229
Welfare Fund	.400	.400	.400
Overhead (1/3 of Total)	.157	.159	.177
Depreciation (1/3 of Total)	.300	.255	.270
<u>Total Costs on Trucks</u>	1.644	1.815	2.076
October 26, 1965			

Consolidated Industries, Inc.

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GENERAL OFFICES



PEORIA, ILL. 61602



January 5, 1966

Mr. J. M. Morris, President  
The United Electric Coal Companies  
307 North Michigan Avenue  
Chicago, Illinois 60601

Dear Mr. Morris:

We are returning your letter of December 16, 1965 unsigned. We feel that an extension of our current Contract through December 31, 1975 would be meaningless in view of the limited Fulton County reserves that are controlled by your Company.

Very truly yours,

Q. W. Wellington  
Vice President, Operations

QWW:afb

## DEFENDANT'S EXHIBIT 27

March 8th  
1966

Mr. J. M. Morris

Some time ago you requested a small scale map of Illinois showing our Fulton County area reserves. Burl has located these proportions on the attached Illinois map which we cut down to letter size for convenience. If, however you desire to show more of the state or possibly the entire state map we have another of these printed maps available.

Also if you want to include our Industry property, this can be shown on this cutout.

I have also attached a table which shows our present reserves as of January 1, 1966 and what potential tons we might possibly get from adjacent tracts.

DALE H. EMLING

DHE/ah

cc: Mr. R. H. Inman  
Mr. B. C. Jensen

## FULTON COUNTY RESERVES

Mine or Field	Controlled 1-1-66	Potential	Total
North Buckheart	10,247,000	275,000	10,522,000
Cuba	5,316,000	2,100,000	7,416,000
Banner	8,760,000	420,000	9,180,000
South Buckheart	11,163,000	1,480,000	12,593,000
North Canton	11,356,000	530,000	11,886,000
<b>TOTAL</b>	<b>46,842,000</b>	<b>4,755,000</b>	<b>51,597,000</b>





## THE UNITED ELECTRIC COAL COMPANIES

307 NORTH MICHIGAN AVENUE

CHICAGO, ILLINOIS 60601

March 14, 1965

28

BRANCH OFFICES  
ST. LOUIS, MISSOURI  
ANALYST: W. D. DAVIS  
FLORIDA, ILLINOIS  
COMMERCIAL NATIONAL  
BANK BLDG.

J. H. MORRIS  
PRESIDENT

MANAGED BY THE  
FIDELITY  
CUBA  
BUCAREAST  
MARTIN ROBERT  
BANKER

Mr. Frank Knight  
Boca Raton Hotel & Club  
Boca Raton, Florida

Dear Frank:

I will see you next week but in the meantime wanted to bring you up to date on the No. 9 seam underground coal near Clay, Kentucky, about which I have given you some information.

Joe Davis, who owns this, is now in a frame of mind to discuss turning it over to some company like Freeman for a future mine on the property. In the meantime two oil companies have entered the scene and are making a determined effort to get control of the reserves. He realizes, however, that this is a long-range proposition and probably will not mean a coal mine in the foreseeable future.

He also is still discussing with both Georgia and Alabama Power a long-term contract but has not as yet been able to get the kind of freight rate on a volume basis that appears necessary.

The TVA has a bid opening on March 29 and he may put in a price on this. He is talking in terms of \$3.60 f.o.b. mine for raw No. 9 mine run, on which I am sure he can safely guarantee 11,900. This would be somewhat near recent award made to Bell & Zeller and might result in a contract. If he did get a contract, I think he would still be willing to discuss leasing the coal rights to someone else to operate.

I told him we were somewhat interested but it would take time to investigate and we would not commit ourselves until a thorough investigation and discussion could be had.

I will talk to you more about it when I see you.

Yours very truly,

*J. H. Morris*

JH:SS

## DEFENDANT'S EXHIBIT 29

July 13th  
1966

Mr. R. H. Inman

Beginning next week we will be drilling in the Medicine Bow Field. Previously, with the preliminary drilling we had on the Greer Boylan property and the Planters State Bank property, Burl had estimated a possibility of around 15,000,000 tons of strippable coal, that is, under a 100' overburden in this area for the one major seam only. With this potential, our plans are to drill the property we have at this time on a 660 grid basis to prove out as much of this estimate as property we control.

Burl tells me at one time he believes that Bill Roope had received verbal approval from someone with Colorado Fuel and Iron for us to drill their property in this area. Some of the Colorado Fuel & Iron lies between our tracts and adjacent to the Planters State Bank property. If we could confirm such an agreement right away it would be possible for us to drill the Colorado Fuel & Iron property on this trip.

/s/ D. H. E.  
D. H. EMLING

DHE/ah

cc: Mr. T. H. Latimer  
Mr. B. C. Jensen

## DEFENDANT'S EXHIBIT 30

July 29, 1966

Mr. T. H. Latimer

Mr. D. H. Emling

We promised Mr. George Heap of Sullivan, Indiana, who brought the area surrounding the Du Quoin reservoir to our attention again, that we would be in touch with him this week or next.

As Mr. Latimer already knows, we have considered the coal acreages up here previously. Mr. Heap pointed out that this could entail twenty-five million tons. However, I beg to differ with him as we have recently reviewed our Du Quoin operation and at this time consider a ratio of 16-17 to one as our stripping limit in this location. The thickness of this coal is at least a foot thinner than we are presently mining at the Du Quoin mine. Therefore, this ratio would be in the area of 65-70 ft. of overburden.

As we promised this man some word this week or the first of next, please review this as soon as possible and advise.

/s/ R. H. Inman

R. H. INMAN

RHI:LJ

## DEFENDANT'S EXHIBIT 31

August 9th  
1966

Mr. R. H. Inman

## STAR LAKE FIELD

*McKinley County, New Mexico*

In this field there are three state sections which must be ruled on at the August 12, 1966 Board Meeting. As we are interested in prospecting this area further we should keep Permit Nos. M-14728 (641.39 acres) and M-14730 (636.64 acres).

These prospecting permits are for only one year, therefore, we must apply for a state coal lease. The first year coal lease payment would be a minimum annual rental of \$25.00 plus an advance royalty payment of \$3.00/acre, giving a total cost of \$3,884.09 for both sections. The second year advance is at the rate of \$4.00 per acre and each year thereafter is at \$5.00 per acre rate.

There is a coal washout on permit #14730. Our drill spacing is not close enough to exactly define the washout area, but we feel we can reasonably reduce the lease acreage to 400 acres and still tie up most of the coal on this section. This would reduce the total payment to \$3,174.17.

State Permit M-14729 (640 acres) is probably underlain by thick coal, but the overburden is greater than 100'. As the reserves are not strippable this section should be dropped. Total cost on the section would be \$1,945.00.

Attached are estimate sheets covering these sections.

/s/ Dale H. Emling  
D. H. EMLING  
B. C. JENSEN

DHE/ah  
BCJ/ah



## DEFENDANT'S EXHIBIT 32

## THE UNITED ELECTRIC COAL COMPANIES

307 North Michigan Avenue  
Chicago, Illinois 60601  
September 12, 1966

Mr. Frank Nugent, President  
Freeman Coal Mining Corporation  
A Division of General Dynamics Corporation  
300 West Washington Street  
Chicago, Illinois 60606

Dear Frank:

I am sending you herewith copy of inquiry from the Resources Company, which you will find more or less self-explanatory.

It is designed to provide coal from a field controlled by the Resources Company in Utah for a power plant to be built by three utilities, including Southern California Edison. They apparently want somebody to mine the coal for them and the enclosed outlines a proposal they want.

As this is underground coal, I am sending it to you for whatever action you see fit to take.

Yours very truly,

/s/ John  
JOHN

JMM:EW

## DEFENDANT'S EXHIBIT 33

October 18, 1966

Mr. T. H. Latimer:

In regard to Mr. George E. Heap's proposition on the Sunfield area, which is mainly around the city of Du Quoin's water supply lake, our geologist estimates approximately  $12\frac{1}{4}$  million tons of coal under 80 ft. of overburden. The better stripping is under the lake, and  $3\frac{1}{3}$  million tons is presently under water.

There are approximately 117 houses surrounding this lake. Seven of these homes are in the \$15,000 to \$25,000 bracket, either on purchased land or land leased from the city of Du Quoin. One hundred ten houses are worth from \$2,000 to \$5,000 each.

Mr. Heap's proposal is that he would require a 3¢ per ton royalty on coal up to a depth of 100 ft. Because of the thickness of this coal and the amount of rock in the overburden, we question whether 100 ft. is economically strippable. This coal is approximately 5 ft., which is about one foot less than we presently are mining at the Fidelity mine. Mr. Heap desires 75% advance royalty on the estimated tonnage and a payment of \$12,-000 initially and \$12,000 annually until mining starts.

The first problem to be resolved is, what is the estimated tonnage. Mr. Heap is estimating 25 million, we estimate considerably less. Mr. Heap presently has one option to purchase in this area of 480 acres. Before we pay Mr. Heap 75% advance royalty, United or Mr. Heap should control 75% of the property that is agreed upon as being strippable. An agreement possibly could be made up giving Mr. Heap a certain period of time to acquire in his name the other properties that would eventually be transferred to United. The agreement should also include, after this period of time, United's right of first refusal. We possibly could pay Mr. Heap's expenses and cost during the time he is endeavoring to acquire these properties.

As you know, I am not very optimistic about this field. I do not feel that anyone except United or Truax-Traer will mine the area because of the size.

If Mr. Heap desires to talk on these terms, we will be glad to meet with him and discuss the matter more thoroughly.

We are, of course, very much concerned about the lake and the drainage into this lake. We question whether the city of Du Quoin would allow a coal company to mine this property by strip methods, and with the number of houses on the lake, the cost may be prohibitive.

/s/ R. H. Inman  
R. H. INMAN

RHI:IJ

cc: Mr. J. M. Morris

Mr. J. T. Murray

## DEFENDANT'S EXHIBIT 34

## ILLINOIS STATE GEOLOGICAL SURVEY

Natural Resources Building  
Urbana, Illinois 61801

July 31, 1967

Mr. Frank Nugent, President  
Freeman Coal Mining Corp.  
307 North Michigan Avenue  
Chicago, Illinois

Dear Mr. Nugent:

The following is written in response to our recent conversations concerning our series of reports entitled "Strippable Coal Reserves of Illinois" and the general status of strippable coal reserves in the State.

As you have indicated, correctly, the prime objectives of this study have been to develop all available data to suggest little or unknown areas where such reserves might exist and to determine an "estimate of reserves." Several significant points spelled out in the text of this series of reports are reviewed for you here.

1. Minimum coal thickness considered is 18 inches.
2. Maximum overburden thickness considered is 150 feet.

3. 1800 tons per acre foot was used in calculations, in order to be in conformity with U. S. Geological Survey standards. As our coals largely fall in the lower range of the high volatile coals, we have felt that 1770 tons per acre foot might be more representative.

4. No exclusions have been made for surface features that would render mining impractical, such as towns, railroads, highways, etc. These exclusions were not made because it was not practical on the scale of our mapping and with much data not readily at hand to make any such exclusions consistently. No evaluations have been made of mining conditions or coal quality.

5. "Reserve" figures represent total coal remaining in the ground as of the date of each study, and no attempt has been made to estimate "recoverable" reserves.

We cannot assess economic feasibility for strip mining as this is strictly an industry matter that varies from day to day and even may have variable response from different companies at the same time. It should be emphasized, however, that the estimates for total coal in the ground are reported in such a way that current economic conditions in any particular area can be assessed relative to factors reported in these studies. Overburden categories of 50, 100, and 150 feet, and average thickness, generally in one foot increments, permit the reader to put thickness and overburden limits within his own current definition. It is a serious mistake to use merely total values as published without considering the definitions.

As you well know, we have maintained very close working relationships with *all* major coal companies in the State and have rendered assistance in locating possible new reserves for many years. As of about 15 years ago, although the coal industry of the State was much depressed, a high level of activity in locating strippable coal reserves remained and has continued in the years since. A somewhat comparable scramble for new underground reserves has developed in the last several years.

So intense has been the interest in the more favorably situated strippable reserves, that I do not know of any prime acreage that is not now under control. We continue to hope from our studies that additional prime reserves may be discovered in areas not now proved, but know that the more promising areas that were previously little known have been tested.

Concerning your inquiry about Indiana and Kentucky strippable coal, I am not as intimately familiar with these areas as with Illinois, but know that the same general picture holds for these areas (as it does for other coal areas east of the Mississippi River, I am sure).

We certainly agree that no economic factors are evaluated by our studies. Further, although significant reserves are held by several companies, we cannot now specifically designate any area where coal under con-



ditions generally being mined at present are available, other than lands under control. It has been our sincere hope that in the use of our reports that the limitations and objectives would be appreciated by the users.

If I may provide any further information, please do not hesitate to let me know.

Sincerely yours,

/s/ Jack A. Simon  
JACK A. SIMON  
Principal Geologist  
Geological Group

## STANDARD COAL CONTRACT

35

THIS AGREEMENT subject to the terms and conditions printed on the reverse side hereof,  
30th day of September, 1968, between THE UNITED ELECTRIC COAL COMPANIES, INC.  
Michigan Avenue, Chicago 1, Illinois, hereinafter referred to as Seller, and CENTRAL ILLINOIS LIGHT  
COMPANY of Peoria, Illinois

hereinafter referred to as Buyer, is as follows:

Seller hereby agrees to sell and deliver, and Buyer hereby agrees to purchase and accept, between the  
1st day of January, 1973, and the 31st day of December, 1991,

the quantity and kind of coal and at the price and on the terms and conditions hereinafter stated, to-wit:

QUANTITY One million tons per year (plus or minus 10%).

RATE OF SHIPMENT (approximately) Approximately equal monthly quantities.

DESCRIPTION: Coal under this contract shall be Fulton County, Illinois, No. 5 and No. 6 seam  
Washed 1-1/4" Screenings (see attached Supplement)

produced at the Buckheart Mine of Seller.

PRICE \$4.25 per net ton f.o.b. mine, exclusive of any sales, occupational, or use  
taxes. See attached Supplement which is hereby made a part of this Contract.

TO BE SHIPPED TO Buyer.

DESTINATION Generating Stations as designated by Buyer.

USE: Coal shipped hereunder to be used for boiler fuel  
in its proper various plants.

ROUTING As specified by Buyer TRANSPORTATION EQUIPMENT As specified.

Net cash on or before 10th day of each month for all coal shipped  
 during preceding calendar month.

TERMS OF PAYMENT (All payments are payable in United States Dollars or funds equivalent thereto)

IN WITNESS WHEREOF the parties hereto have caused this agreement to be executed in quadruplicate by their  
 respective officers duly authorized the day and year first above written.

CENTRAL ILLINOIS LIGHT COMPANY

BUYER

By A. H. Davis  
 Title Vice President

THE UNITED ELECTRIC COAL COMPANIES

SELLER

By H. T. Cowie  
 Title President

## DEFENDANT'S EXHIBIT 36

Peoria, Illinois 61629

September 5, 1969

Mr. Reuben L. Hedlund  
Kirkland, Ellis, Hodson, Chaffety & Masters  
Prudential Plaza  
Chicago, Illinois 60601

Dear Mr. Hedlund:

The results of five feasibility studies made on the use of coal versus gas for fuel are as follows:

1. East Peoria Plant -- study made in 1967 by an oil supplier indicated a higher cost for natural gas and/or oil. Decision was to continue using coal for fuel.
2. East Peoria Plant -- study made in 1965 on the use of natural gas for producing steam indicated that the use of natural gas would result in increased fuel costs. Decision was to continue using coal for fuel.
3. Aurora Plant -- study made in 1965 on the use of natural gas for two new buildings resulted in the purchase of two natural gas fired steam boilers to supply heat for process and building heat.
4. Mapleton Plant -- study made in 1965 resulted in the purchase of gas-fired make-up air units. No coal is used at the Mapleton Plant.
5. Mossville Plant -- study made in 1966 resulted in the purchase of a 125,000\$/hr. gas-fired boiler to supplement the two 80,000\$/hr. coal-fired boilers.

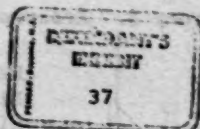
Sincerely,

*John Welsh*  
Supervising Engineer  
Mfg. General Office  
Plant Engineering

JWelsh  
Phone (309) 675-4131  
ed

cc: SDabney

DEPARTMENT OF JUSTICE  
Room 2634 United States Courthouse  
Chicago, Illinois 60604



60-0-37-920

September 12, 1969

BY MESSENGER

Reuben L. Hedlund, Esq.  
Kirkland, Ellis, Hodson,  
Chaffetz & Masters  
Prudential Plaza  
Chicago, Illinois 60601

Dear Mr. Hedlund:

By letter dated September 8, 1969, you requested information concerning the sale by Peabody Coal Company of a new coal company (which Peabody refers to as the "Midland Division") which is required by Paragraph VII of the Final Judgment in United States v. Peabody Coal Company et al., dated October 23, 1967.

Your first request is for a list of the companies approved by the Government as eligible potential purchasers of the Midland Division from those firms which had expressed an interest in the properties to be divested by Peabody. On July 2, 1969, we advised counsel for Peabody Coal Company what our views were at that time with respect to the following prospective purchasers:

Group 1. No objection - subject to receipt of satisfactory financial information:

Alberta Coal Ltd.  
New Era Corporation  
Sherwood-Templeton Coal Co. Inc.  
H. E. Drummond Coal Co. Inc.

Group 2. No objection:

Cerro Corporation  
Utah Construction & Mining Co.  
The Cleveland-Cliffs Iron Co.  
Ziegler Coal & Coke Company

**Group 3. Reserved:**

Panhandle Eastern Pipe Line Company  
Pickands Mather & Co.  
Cities Service Oil Company  
The LaSalle Corp. (Henry Crown & Co.)  
Great Lakes Carbon Corp.  
American Smelting and Refining Co.  
Ashland Oil & Refining Co.

**Group 4. Unacceptable:**

Pittsburg & Midway Coal Mining Co.  
The North American Coal Corp.

Your second request asks for the total tons of recoverable coal reserves assigned to each of the Midland Division's three mines, whether owned or controlled by location. Peabody Coal Company has represented that the total available coal reserves owned, leased, under option or controlled by location for each mine are as follows:

Elm, approximately 65,000,000 tons.  
Mecco, approximately 55,000,000 tons.  
Allandale, approximately 8,500,000 tons.

As you are aware, coal reserves "controlled by location" refer to coal reserves in the vicinity of a mine which reserves are owned by third parties and which reserves may be acquired in the future.

Your third request calls for the expected life of the three mines.

Paragraph VII of the Final Judgment requires the sale of a coal company producing and selling 6,000,000 tons of coal each year that shall have or shall reasonably be expected to be able to obtain sufficient coal reserves for continued production and sale of bituminous coal of not less than 6,000,000 tons each year for 20 years. Peabody Coal Company offers to sell the above described mines to comply with the Final Judgment.

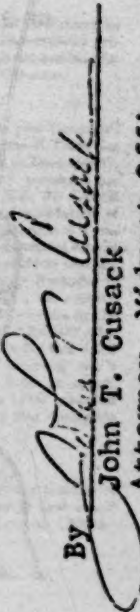


Your fourth request asks for the present time schedule for the submission of bids from potential purchasers of Midland and the contemplated date of sale. The Final Judgment requires Peabody Coal Company to sell the coal business to a purchaser approved by the United States or by the sale of stock to the public through an underwriter on or before October 23, 1969. It is our understanding that Peabody Coal Company has invited bids to be submitted on or before September 15, 1969.

I hope that this information will be helpful to you in formulating a settlement proposal.

Sincerely yours,

RICHARD W. McLAREN  
Assistant Attorney General

By  \_\_\_\_\_  
John T. Cusack

Attorney, Midwest Office  
Antitrust Division

**DX 38 Zeigler Coal & Coke Company and Subsidiaries**  
**1965 Annual Report**

\*\*\*



**TO OUR SHAREHOLDERS**

Results of operations for 1965 are submitted in detail in this report for the year. In the major categories, such as total production, sales and net income, our 1965 figures were approximately the same as for the preceding year. Apart from normal coal operations, the past year will be considered noteworthy for the reason that negotiations were completed for the sale of natural gas from your Company's West Kentucky properties. Also, your Company, during the past year, was the successful bidder for a large coal contract with the Tennessee Valley Authority. Dividends totalling \$1 per share were paid during the year.

Concerning 1966, we have every confidence of an improvement in earnings.

**Production, Sales, Net Income**

Production of coal in 1965 amounted to

4,468,371 tons. Net sales in the year 1965 totalled \$17,600,334.

Both production and net sales were slightly improved over that of 1964.

Net income for 1965 after taxes amounted to \$1,024,622 as compared with \$1,009,603 in 1964. The 1965 net income was equal to \$2.14 per share as compared with \$2.12 per share in 1964.

**Coal Operations**

Operations of our mines were at a satisfactory level in 1965 with the exception of our Zeigler No. 3 mine. This latter property continued to present us with serious operating difficulties. Our earnings for the year would have been materially improved if we had been able to operate this mine without a loss. In spite of the difficulties, we are still hopeful that our

problems can be successfully solved so as to make this mine a more satisfactory operating venture. It is not an easy decision to close a mine and leave millions of tons of coal unmined. We will avoid such action if it is at all possible, although it is not our intention to continue to operate the mine if our mining problems cannot be resolved.

#### TVA Contract

A major event of the year and a significant development in the current history of the Company was the coal contract award received in October from the Tennessee Valley Authority. The award, largest in the history of Zeigler and its subsidiary, Bell & Zoller, involves a total of 26,000,000 tons of coal to be delivered over a 15-year period.

At the time of the announcement of the award, a letter to shareholders notifying them of this development said: "We expect the revenues from the award to contribute satisfactorily to earnings of the Company over the life of the contract."

To fill requirements of the contract necessitates our opening a new mine on our Hopkins County, West Kentucky, properties. The fact that your Company owns substantial reserves of coal in that area was a consideration in the award decision made by the TVA authorities.

The operation of the mine will be featured by the use of the most modern high-capacity production machinery and equipment available for the underground mining of this seam.

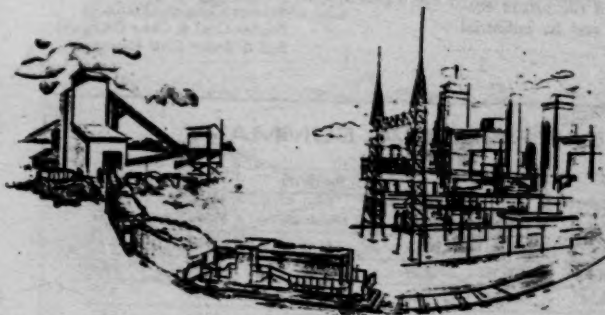
#### Natural Gas

Delivery of natural gas from your Company's West Kentucky wells to the line of Texas Gas Transmission Company began on December 17, 1965, shortly after temporary permission for such sale was forthcoming from the Federal Power Commission. The actual introduction of this fuel into the distribution channels of Texas Gas grew out of a gas purchase contract entered into with that Company. Stockholders were advised of this event by letter dated November 9.

As pointed out in that letter, the contract with the transmission company provides for the sale to them of a minimum of 4,200,000 cubic feet daily at a price of 17 cents for each 1,000 cubic feet, with the contract extending over a 20-year period. Texas Gas, under an option, can purchase at 15 cents per 1,000 cubic feet all of the gas in place at any time during the first 12 years of the contract.

#### Land Reclamation

Your Company is engaging in a program to develop several thousand acres of land owned in Franklin and Williamson Counties (Illinois)



for farm land or other productive purposes. Plans for upgrading the land-use followed preliminary studies that revealed a considerable amount of existing non-farm acreage is tillable land while other land in the area may also be converted in this manner to economically useful purposes. Between 6,000 and 7,000 acres of timberland are included in the program. The program as a whole can provide increased agricultural production and afford improved hunting and fishing in cooperation with conservation measures.

#### Properties and Reserves

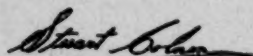
An accompanying reproduction of an area map identifies the location of the Company's principal coal producing properties. Our Southern Illinois mines are located in an area known for many years as the "Quality Circle", and the West Kentucky properties are also favorably identified in the same manner in regard to the quality of coal being marketed from that section. Our association with this kind of identification is insured for a long period of time since your Management has been careful to accumulate new and added reserves of coal as it has drawn upon available resources. Coal as an energy fuel and as a natural resource is receiving revived attention, especially from those who are concerned with the future economic security of the nation and its industrial might.

#### Organization

In keeping with the Company's retirement policy, Mr. William F. Landes resigned as Executive Vice President of Bell & Zoller Coal Company and Mr. Conrad W. Peterson resigned as Vice President and Treasurer of Zeigler Coal & Coke Company. Mr. Landes continues as a Director of Zeigler Coal & Coke Company. Mr. Warren Wurzburg, Vice President in Charge of Sales of Bell & Zoller Coal Company, was named Vice President of Zeigler Coal & Coke Company and John R. Cosbey was promoted from Assistant Treasurer to Treasurer of Zeigler Coal & Coke Company. Michael K. Reilly was elected Assistant Secretary of Zeigler Coal & Coke Company.

Mr. Landes and Mr. Peterson in their many years with the Zeigler and Bell & Zoller organizations contributed notably to their success. Their advice and counsel, growing out of long years of service in the best interests of our companies, will continue to be available.

Cordially,



STUART COLNON, President  
Zeigler Coal & Coke Company  
Bell & Zoller Coal Company

### TEN YEAR FINANCIAL SUMMARY

Year	Net Sales	Net Income	Shares Outstanding	Per Share			
				Net Income	Dividends	Book Value	Current Ratio
1965	\$17,600,334	\$1,024,622	479,687	\$2.14	\$1.00	\$28.89	2.81
1964	17,371,027	1,009,603	476,382	2.12	1.00	27.81	2.61
1963	16,620,632	716,762	476,382	1.50	1.00	26.94	3.95
1962	17,333,439	828,053	471,806	1.76	1.00	26.54	3.97
1961	18,078,645	992,667	462,781	2.15	.85	26.05	3.73
1960	19,155,436	1,062,510(1)	440,256	2.41(1)	.75	25.03	3.56
1959	19,157,595	773,210	423,409	1.83	.60(2)	23.37	3.19
1958	19,395,540	737,805	409,359	1.80	.60(3)	22.81	1.96
1957	21,326,174	372,603	390,363	.95	.80	22.65	2.66
1956	22,530,625	866,975	392,263	2.21	.85	22.41	2.56

(1) Does not include Non-Recurring Capital Gain of \$224,276 or \$.51 per share.

(2) Additional 3% dividend in stock paid December 10, 1959.

(3) Additional 5% dividend in stock paid December 11, 1958.

**DX 39 Zeigler Coal & Coke Company and Subsidiaries  
1966 Annual Report**

**To Our Shareholders:**

The year 1966 was an unsatisfactory one for the Company. As disclosed in quarterly shareholder letters, the Company had to contend during much of the period with adverse conditions at certain of its mines, notably Zeigler #3, finally closed in December. Actions taken to deal with production troubles in these areas were bearing fruit in such manner that improvement in our operating experience was being emphatically shown in early 1967. Also, satisfactory progress can be reported in the construction of our new West Kentucky #9 mine, output of which will go to fill our large Tennessee Valley Authority coal contract. Meanwhile, oil and gas continue to contribute substantially to our income.

**Production and Sales**

Production of coal amounted to 4,245,230 tons in the year ended December 31, 1966. In the preceding year production was 4,468,371 tons.

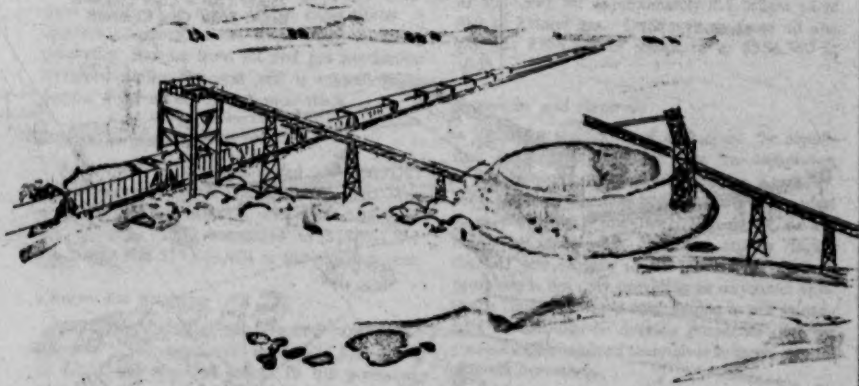
Net sales for 1966 of \$17,441,404 compared with \$17,600,334 the year before.

**Income and Extraordinary Charge**

The accompanying Consolidated Statement of Income sets forth in detail the facts about revenues for the year, costs and expenses, federal taxes and takes account of the extraordinary charge made against 1966 earnings incident to the closing of Zeigler #3. It will be seen that income, before federal tax provisions, amounted to \$630,224 and that after adjustments of taxes, income was \$730,476. Were it not for the extraordinary charge imposed by the closing of Zeigler #3 the statement of the year's earnings would terminate at that point, indicating 1966 earnings equal to approximately \$1.53 per share. However, the necessity of applying losses of the Zeigler #3 closing to the fiscal period in which the action took place created the extraordinary charge of \$638,093. After that charge, net for the year amounted to \$92,383.

**TVA Contract**

We were able to report, in the annual statement for 1965, that the Company and its subsidiary, Bell & Zoller Coal Company, had been awarded a major coal contract by the Tennessee Valley Authority—a contract involving 26,000,000 tons to be delivered over a 15-year period. Last June, we began construction of the mine in West Kentucky, and slope construction and the building of surface facilities have been progressing satisfactorily. Our production schedule calls for shipments to begin this fall barring unforeseen circumstances. We will, in quarterly reports, keep you apprised of the progress of this mine. The accompanying sketch provides shareholders with an artist's conception of the surface appearance of the mine.



Artist's concept of surface facilities of Zeigler #9 mine.



### *Natural Gas*

The Company has been supplying natural gas from its West Kentucky wells to the line of Texas Gas Transmission Company for a little more than one year. For the year 1966, approximately 2.1 billion cubic feet of gas was supplied at a price of \$1.17 per one thousand cubic feet which provided revenue amounting to \$356,783. Total revenue from oil and gas amounted to \$356,340 as compared to \$159,726 in 1965.

### *Capital Expenditures*

Expenditures for capital improvements and expansion will be at a high level for the Company in 1967. Under a term loan agreement, negotiated in connection with the Zeigler #9 mine now under construction, the Company may borrow from two banks a total of \$3,500,000 to July 5, 1967. As of December 31, 1966, the sum of \$300,000 had been borrowed against this commitment, which will continue to be drawn upon as construction proceeds to completion. The bank loan is for a term of five years, at a rate considered satisfactory to the Company. Its provisions are those common to such undertakings. The expenditure for capital purposes in 1966 totalled \$1,460,526 and it is anticipated that about the same amount will be required in 1967 over and above the cost of construction of #9.

### *Outlook*

As 1965 ended, I reported to you my hope for an improvement in all of our production operations, especially at our Zeigler #3 mine. Unfortunately, this latter was not to be and so, as I reported earlier, the drastic step of closing the mine was taken.

Our new Zeigler #9 mine supplying the Tennessee Valley Authority contract will contribute little to income in the year 1967. We will be in development work for substantially the entire year. I would like to repeat what was stated when the award was made: we believe it will be a most profitable contract.

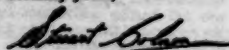
The problems we experienced at our other mines, about which I have written during the past year, have largely been resolved. These mines are operating successfully and profitably, and our preliminary figures for January and February are an indication of that fact.

The Company is realizing a large income from gas and oil properties it owns. We have no reason to believe that they will not remain a continuing source of revenue. Drillings are proceeding, and if successes occur in this area, shareholders will be kept advised.

### *Summary*

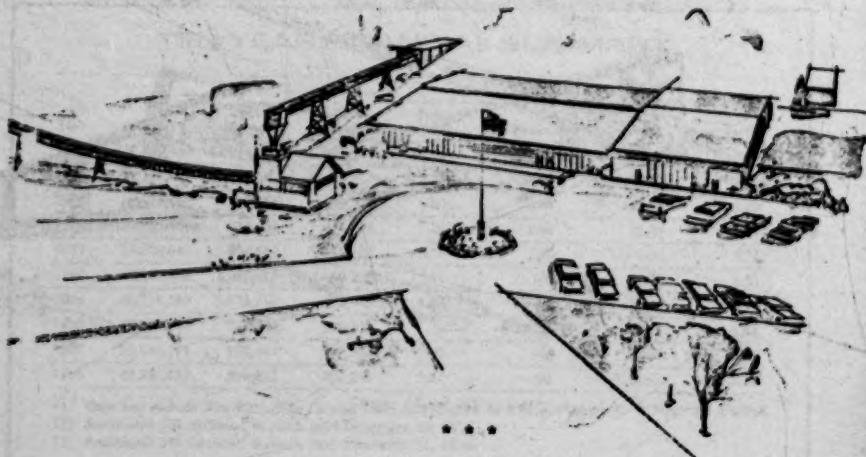
It can be said with a high degree of confidence that the outlook for 1967 is for substantial improvement over 1966. It is not my intention to try to predict the extent of this improvement. Progress here will be covered in the interim reports to you during the course of the year.

Cordially yours,



STUART COLNON, President  
Zeigler Coal & Coke Company  
Bell & Zoller Coal Company

March 27, 1967



# **DX 40 Zeigler Coal & Coke Company and Subsidiaries 1967 Annual Report**

\* \* \*

## **TO OUR SHAREHOLDERS**

The year 1967 proved to be one of the most profitable years in the history of our Company. In quarterly reports to you during the past year, you were kept informed of our progress. As expected, sales and production were less than in 1966; but, as anticipated, our operating results were very gratifying. In addition to the completion of our West Kentucky #9 mine, our Company continued to make capital expenditures to improve efficiency of the three other operating properties. Income from oil and gas production increased during the year and is exceeding the present dividend on the common stock.

### *Production and Sales*

Production of coal amounted to 4,063,087 tons in the year ended December 31, 1967. The previous year's production was 4,245,230 tons. Net sales for 1967 amounted to \$15,861,781 compared with \$17,441,404 in the previous year.

### *Income and Expenses*

Net income after all charges and expenses in the year 1967 amounted to \$1,341,839 equal to \$2.81 per share of stock. In the preceding year, on a comparable basis, net income was \$730,476 or \$1.53 per share. It will be recalled that in 1966 we had to apply, against that year's

earnings, an extraordinary charge of \$638,093—the equivalent of \$1.34 per share — incident to the closing of the Zeigler #3 mine, and so our actual net income per share for 1966 was 19 cents.

### *Natural Gas and Oil Income*

In 1967, the Company received gross revenues of \$357,977 for approximately 2.1 billion cubic feet of natural gas. Total revenue from oil and gas was \$596,366 as compared to \$556,340 in 1966.

### *Properties and Reserves*

From the standpoint of operations, the significant development in 1967 was the completion of our new mine (#9) at Madisonville, Kentucky. Production at this mine began, on a most modest scale, shortly after mid-1967. The output, we are happy to report, has expanded rapidly during the last few months of the year. This modern operation is not only providing an economic asset to the Company but is contributing to our knowledge of methods to develop properties that we possess which can lend themselves to large-volume contract operations.

One of our older mines, "Oriole," located in West Kentucky, discontinued operations very late in 1967. This action was necessary for the vein

of coal that supported this operation had been worked out and the small amount of coal that remained could not be mined profitably. The closing of this mine did not incur any extraordinary charge for the Company, as in the case of our #3 mine in 1966, because the slope at Oriole offers the possible opportunity of re-opening this property and of mining the #9 seam of coal that lies beneath it. This possibility is being thoroughly investigated and assessed.

Among the improvements in the upgrading of our other properties is the new slope at our Murdock mine, now under construction. When this work is completed, the mine can be more profitably operated to meet the demand of a new long-term contract that was recently awarded us.

We have not, heretofore, reported on the reserves of coal that your Company either owns or leases. Conservatively, our reserves at the 1967 year-end were in excess of 500,000,000 tons of recoverable coal. We are continuing a ceaseless quest to gather coal reserves, and we consider it a major undertaking of the Company. During the last ten years we have mined approximately 42,000,000 tons while in the same period of time we have added over 150,000,000 tons to our reserves. We feel that the coal acreage that has been added during this period has strengthened our position in the industry and enhanced our future production potential for long-term contracts.

The work of reclaiming surface land owned by your Company continues. At present, approximately 4,400 acres are involved in this effort, and it is being directed by a competent agricultural and farming staff. In 1968, additional acreage will become available for cultivation. This is a continuing, long-term project for the Company and one that is certain to add to the over-all profits and value of the Company in future years.

#### *Capital Expenditures*

Our capital expenditures during 1967 were larger than the average of past years due primarily to the construction costs of the new #9 mine.

Including that undertaking, and the amount spent at other properties to maintain them in efficient condition, the total for the year was \$4,750,198. The accompanying financial statements set forth the borrowing that was necessary in order to carry out these programs, notably the investment that had to be made for an entirely new property, namely, our #9 West Kentucky mine. The amount required for future capital outlays will be more in keeping with normal demands of our properties.

#### *Organization*

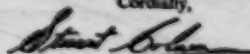
Certain changes in the organization structure of Zeigler Coal & Coke Company took place during the past year. The undersigned was named Chairman of the Board of Zeigler Coal & Coke Company. Mr. Michael E. Walsh, Vice President, was named President of the Company. Mr. John R. Cosbey was named a Vice President.

Bell & Zoller Coal Company, our operating company, had the following changes in its organization: Mr. Warren F. Wurzburg, a Vice President previously in charge of Sales, was placed in charge of Administration of that Company; Mr. Scott M. Rogers, a Vice President, was put in charge of Sales; Mr. Arthur Towles, previously General Mine Superintendent, was named Vice President of Operations. Mr. John R. Cosbey and Mr. Michael K. Reilly were named Vice Presidents.

Without the excellent work of my associates, the gratifying results of 1967 could not have been achieved. I am most grateful to them for giving me the privilege of presenting this fine report for the year 1967.

We look forward to 1968 as being a very good year.

Cordially,



STUART COLNON  
Chairman

March 22, 1968

DK 41 Seigler Coal & Coke Company and Subsidiaries  
1968 Annual Report . . .

	1968	1967
Net sales <sup>1</sup> .....	\$15,312,751	\$15,001,781
Net income.....	912,491	1,341,830
Net income per share.....	.34	3.31
Cash dividends paid per share.....	1.00	1.00
Net assets applicable to stockholders' equity.....	13,900,014	14,378,234
Book value per share.....	29.38	30.15
Shares of common stock outstanding.....	475,408	476,800

Year	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Net sales	\$15,312,751	\$15,001,781	\$13,041,404	\$17,880,324	\$17,571,257	\$18,828,822	\$17,332,428	\$18,878,846	\$18,198,428	\$19,157,395
Net income	\$912,491	\$1,341,830	\$ 758,476(1)	\$1,814,822	\$1,888,563	\$ 754,762	\$ 828,853	\$ 882,887	\$1,940,346(2)	\$ 772,519
Shares outstanding	475,408	476,800	477,867	478,887	478,502	478,502	477,888	485,781	486,759	473,468
Net income (per share)	.34	3.31	\$1.52(1)	\$3.74	\$3.92	\$1.53	\$1.73	\$2.15	\$3.92(2)	\$1.63
Dividends paid (per share)	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	.80	.80	.80(3)
Book value (per share)	\$29.38	\$30.15	\$27.55	\$36.89	\$37.71	\$39.34	\$38.54	\$39.85	\$39.83	\$35.37
Earnings ratio	3.15	3.37	3.40	3.81	3.81	3.95	3.97	3.73	3.34	3.19

1 Does not include extraordinary charge of \$428,000 or \$1.24 per share.

2 Does not include non-recurring gain of \$204,576 or \$1.01 per share.

3 Additional 3% dividend in stock paid in 1975.

**ZEIGLER**

Coal & Coke  
Company

**To our shareholders:**

High maintenance and operating costs at our Zeigler #9 mine, coupled with difficult mining conditions at Zeigler #4, none of which could have been anticipated, made 1968 a disappointing and trying year. In addition to these operating difficulties, all of our mines were victims of unauthorized work stoppages last Fall while a new union contract was being negotiated. It was truly a year of pyramiding difficulties, and it is to the credit of our management and supervisory team that the final results for the year were not more disappointing.

Operating conditions and production improved considerably during the closing weeks of the year, however, and better results were experienced after the turn into the new year. Therefore, I look forward to a satisfactory showing for the first quarter of 1969 and the balance of the year with our major difficulties, incurred last year, behind us.

This Annual Report brings to you the detailed information about all phases of the financial record of 1968 compared with 1967, and earlier years as well. We would recommend a careful examination of the material on the following pages and will welcome any inquiries Shareholders may wish to make.

**Production and Sales**

Production of coal amounted to 4,038,356 tons in the twelve months ended December 31, 1968, compared to 4,063,087 in 1967. Net sales for 1968 amounted to \$15,312,751 compared with \$15,861,781 in the preceding year.

**Income and Expenses**

Net income, after all charges and expenses in the year ended December 31, 1968, amounted to \$112,471 equal to 24 cents per share of common stock of which there were 475,408 shares outstanding at the year end. In 1967 the Company enjoyed one of the best years in its history, earning \$1,341,839 or \$2.81 per share. Produc-



tion and operating difficulties, earlier described, were so severe that their effect on 1968 profit results for the year were inevitable. We dealt earnestly and as successfully as possible with the problems the year developed, and we can only say that the whole organization is determined to make 1969 a banner year.

#### Gas and Oil Income

In 1968, income from oil and gas sources amounted to \$462,372 as compared with \$596,366 in the previous year. In 1968, sales of natural gas amounted to 1.6 billion cubic feet as compared with 2.1 billion in the preceding year. The decline in sales of natural gas and oil may be expected to continue and thus reduce the amount of income from this source. However, plans are under way actively to resume exploratory operations to obtain new sources of revenue from oil and gas on Company-owned property.

#### Properties and Reserves

Company-owned reserves of coal were increased during 1968, and we estimate that at the present time the Company has reserves in the neighborhood of 550,000,000 recoverable tons, up from 500,000,000 tons in 1967. The size of these reserves testifies to the strong underlying position of your

Company, making it possible for it to negotiate long-term contracts with major consumers, potentially the greatest growth opportunity for the Company.

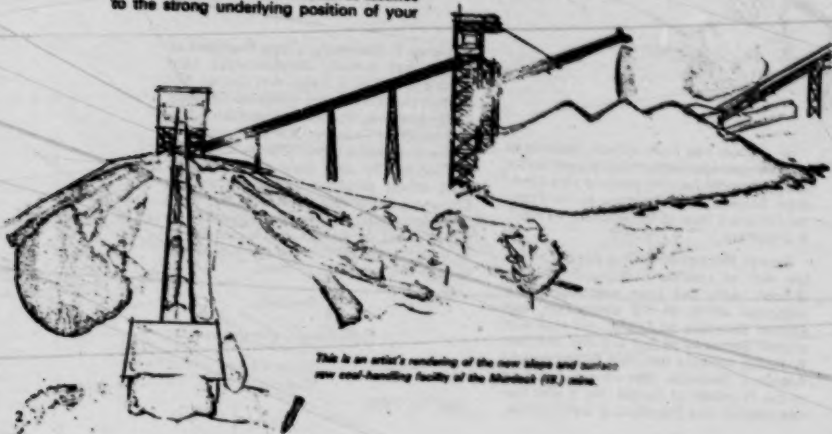
In the 1967 Annual Report we referred to improvements under way at our Murdock (Ill.) mine. The new slope and new raw coal handling facilities there have been completed, and an accompanying sketch shows the modern resulting operation as it is at present.

We are continuing to reclaim surface lands for our farming program. At present, approximately 4,700 acres are involved, and, to this total, more acreage will be continually added.

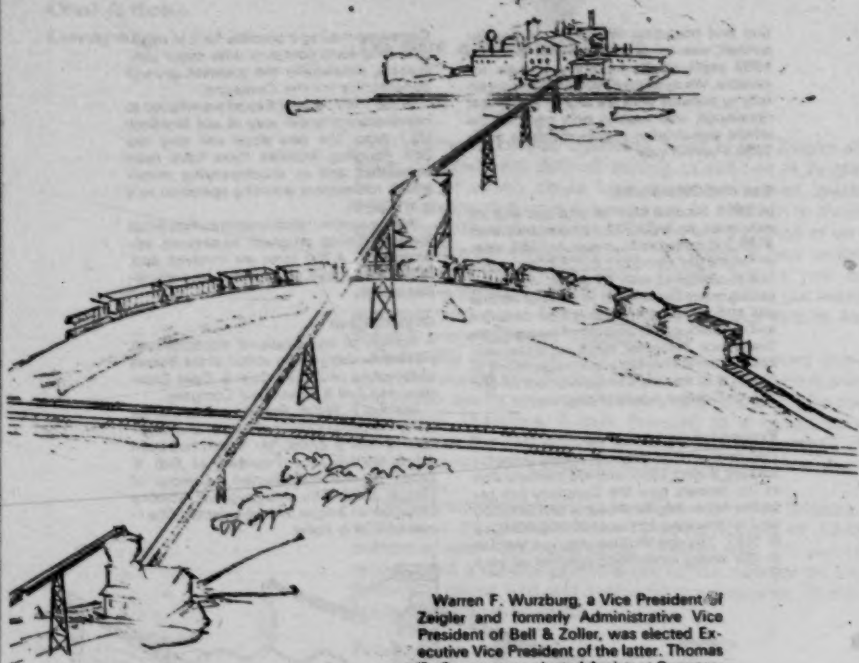
#### Organization

A number of organizational elections took place early this year by action of the Boards of Directors of Zeigler Coal & Coke Company and Bell & Zoller Coal Company.

Michael E. Walsh, President, was elected Chief Executive Officer of Zeigler and President of Bell & Zoller. Mr. Walsh had been Administrative Vice President of Bell & Zoller. He was also elected a Director of Zeigler Coal. The undersigned remains Chairman of Zeigler and was elected Chairman of Bell & Zoller.



*This is an artist's rendering of the new slope and surface raw coal-handling facility of the Murdock (Ill.) mine.*



Mr. Walsh has been closely associated with the managements of the companies for many years. He held the posts of Vice President, Secretary and Assistant to the President in years prior to his election, in 1967, as President.

George P. Latchford, III, a partner of the law firm of Latchford, Bianucci, Rice & O'Brien, who has been associated with corporate affairs of our companies, was elected Secretary of Zeigler. He was also elected Secretary of Bell & Zoller. Michael K. Reilly, formerly Assistant Secretary and Assistant Treasurer, was named Assistant to the President of Zeigler. He is also Administrative Vice President of Bell & Zoller.

Warren F. Wurzburg, a Vice President of Zeigler and formerly Administrative Vice President of Bell & Zoller, was elected Executive Vice President of the latter. Thomas G. Corman was elected Assistant Secretary and Assistant Treasurer of the Company.

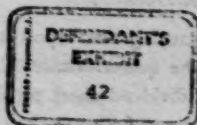
The Company is indebted to its fine Board of Directors for their loyal and conscientious efforts during a trying year for the Company, and our excellent team of officers and supervisory groups performed nobly, as did all of our employees. It is a pleasure to express the appreciation of the companies to each and every one of them.

Cordially,

Stuart Colton  
Chairman

April 23, 1969

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**REPORT**  
**TO THE SHAREHOLDERS**

**THREE MONTHS ENDED**  
**MARCH 31, 1969**

**ZEIGLER**  
**Coal & Coke Company**  
200 SOUTH LA SALLE STREET, CHICAGO, ILLINOIS 60601

### To Our Shareholders:

Accompanying this report of operations for the quarter ended March 31, 1969, is a dividend check to your order in the amount of 25 cents per share.

Sales for the first quarter of 1969 amounted to \$4,728,335 as compared with \$4,414,979 for the same period of 1968. Costs and expenses rose to \$4,282,899 from \$3,973,342 the year before, leaving an operating income for the first quarter of 1969 of \$445,436 compared with \$441,637 for the 1968

period. There was a decline in "other income," derived mostly from oil and gas royalties, to \$112,469 from \$156,276 the year before.

Net income for the first quarter of 1969 amounted to \$184,787 equal to 39 cents per share on 475,408 shares outstanding. For the comparable 1968 period, net income was \$217,411 or 46 cents per share.

Smaller earnings for the first quarter of 1969 compared with 1968 are attributable to a decline in income from oil

### CONSOLIDATED STATEMENT OF INCOME

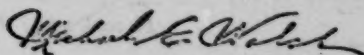
Three months ended March 31,	1969	1968
Net sales .....	\$4,728,335	\$4,414,979
Costs and expenses .....	4,282,899	3,973,342
	<u>455,436</u>	<u>441,637</u>
Other income .....	112,469	156,276
	<u>557,905</u>	<u>597,913</u>
Provision for depreciation and depletion .....	373,118	380,502
Income before provision for Federal income taxes .....	184,787	217,411
Estimated provision for Federal income taxes* .....	-0-	-0-
Net Income .....	<u>\$ 184,787</u>	<u>\$ 217,411</u>
Outstanding shares .....	475,408	475,408
Net Income per share .....	<u>\$ .39</u>	<u>\$ .46</u>

\* Sales for 1969 and 1968 include \$310,000 and \$210,000 respectively of previously deferred coal production payments. Applicable deferred Federal income taxes were offset by the tax effect of percentage depletion allowances, carryforward and other tax credits.

The figures presented in this statement are subject to annual audit.

and gas sources and to losses sustained in operation of our #4 Mine. This mine continues to cause operational difficulties due to faults in the seam. We are hopeful this can be corrected very soon. However, we are happy to be able to report that operating results at all other properties were most satisfactory in the first three months of the year, and we see no reason to anticipate any change in that trend at these mines.

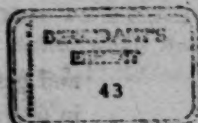
Cordially,



President

May 7, 1969





## REPORT

### TO THE SHAREHOLDERS

SIX MONTHS ENDED

JUNE 30, 1969



**ZEIGLER**  
**Coal & Coke Company**

200 SOUTH LA SALLE STREET, CHICAGO, ILLINOIS 60601

### To Our Shareholders:

This report of operating results for the second quarter of 1969 and the first half of the year is accompanied by a dividend check to your order in the amount of 25 cents per share.

For the three months ended June 30, 1969, net income amounted to \$363,255 compared to \$315,084 in the same period for 1968. Net income per share equalled 74 cents in 1969 against 66 cents in 1968. There were 483,236 common shares outstanding on June 30,

1969, while on June 30, 1968, there were 475,408 shares outstanding. Net sales in the second quarter of this year totaled \$4,635,387 compared to \$4,070,026 a year ago.

The satisfactory results of the second quarter contributed to an improved showing in the six months ended June 30. Net income of \$548,042 in the first half of 1969 compared to \$532,495 in the first half of 1968. Reflecting the increased number of shares outstanding this year, profit per share amounted to

### CONSOLIDATED STATEMENT OF INCOME

Six months ended June 30,	1969	1968
Net sales .....	\$9,364,222	\$8,485,005
Costs and expenses .....	8,214,661	7,478,693
	1,149,561	1,006,312
Other income .....	171,115	289,754
	1,320,676	1,296,066
Provision for depreciation and depletion .....	772,634	763,571
Income before provision for Federal income taxes .....	548,042	532,495
Estimated provision for Federal income taxes*	-0-	-0-
Net income .....	\$ 548,042	\$ 532,495
Outstanding shares .....	483,236	475,408
Net income per share .....	\$ 1.13	\$ 1.12

\* No provision for Federal income taxes required due to the carry forward of tax credits.

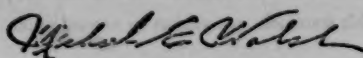
The figures presented in this statement are subject to annual audit.

\$1.13 for the first half of 1969 compared to \$1.12 in the same period of 1968. Net sales for the first six months of this year were \$9,364,222 compared to \$8,485,005 in the corresponding period last year.

Other income, principally from oil and gas sources, decreased by \$118,639 in the first half of this year compared to the first six months of 1968. For the first six months of 1969, other income amounted to \$171,115 compared to \$289,754 in the first half of last year.

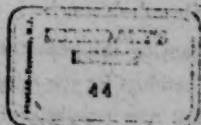
Operating results at our Zeigler #4 mine improved appreciably during the second quarter. Indications are that the improved operating conditions at this mine as well as at all other properties will continue in the months ahead, and satisfactory earnings for the balance of 1969 are anticipated.

Sincerely,



President

August 7, 1969



**REPORT**  
**TO THE SHAREHOLDERS**

**NINE MONTHS ENDED**  
**SEPTEMBER 30, 1969**

**ZEIGLER**  
**Coal & Coke Company**

202 SOUTH LA SALLE STREET, CHICAGO, ILLINOIS 60604

**To Our Shareholders:**

Accompanying this report of operations and earnings for the third quarter and the first nine months of 1969 is a dividend check to your order in the amount of 25 cents per share.

For the three months ended September 30, 1969, net sales amounted to \$4,496,172 compared with \$3,563,498 in the same period last year. For the 1969 quarter, net income amounted to \$255,787 or 55 cents per share, which

compared with a net loss in the 1969 period of \$56,324.

For the nine months ended September 30, 1969, net sales totaled \$13,860,394. For the same period in 1968, net sales were \$12,048,503.

Net income for the first nine months this year amounted to \$803,829, equal to \$1.68 per share as compared with the \$466,171 or 98 cents per share earned in the same period last year.

Under date of August 5, 1969, Texas

**CONSOLIDATED STATEMENT OF INCOME**

Nine months ended September 30,	1969	1968
Net sales .....	\$13,860,394	\$12,048,503
Costs and expenses .....	12,159,920	10,893,378
	<u>1,700,474</u>	<u>1,155,125</u>
Other income .....	261,842	393,417
	<u>1,962,316</u>	<u>1,548,542</u>
Provision for depreciation and depletion .....	1,158,487	1,082,371
Income before provision for Federal income taxes .....	803,829	466,171
Estimated provision for Federal income taxes* .....	-0-	-0-
Net income .....	<u>\$ 803,829</u>	<u>\$ 466,171</u>
Average shares outstanding .....	478,704	475,408
Net income per share .....	\$ 1.68	\$ .98

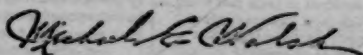
\* No provision for Federal income taxes required due to the carry forward of tax credits.

The figures presented in this statement are subject to annual audit.



Gas Transmission Corporation notified the Company of its election to exercise its option to purchase the Company's interest in the Bethel Formation underlying the Company's holdings in The Midland Field, located in Muhlenberg County, Kentucky. Independent geological consultants are presently determining the reserves in place which will determine the purchase price. As of this writing, production of gas from the Company's holdings in this field has been terminated.

Sincerely,



President

November 6, 1969

6-10-69 (ATTR)

DEFENDANT'S  
EXHIBIT  
45

## TEXT OF REPORT OF NIXON TASK FORCE ON PRODUCTIVITY AND COMPETITION

### SUMMARY OF RECOMMENDATIONS OF THE TASK FORCE ON PRODUCTIVITY AND COMPETITION

We present here a summary of the recommendations of the Task Force on Productivity and Competition. These recommendations are elaborated and defended in the accompanying Report.

1. We recommend that the President issue a general policy statement (a) establishing the Antitrust Division as the effective agent of the Administration in behalf of a policy of competition within the councils of the Administration and before the independent regulatory commissions; (b) urging those commissions to enlarge the role of competition in their industries; (c) marshaling public support for the policy of competition.

2. We urge the commissions to permit free entry in the industries under regulation and to abandon minimum rate controls, whenever these steps are possible -- and we think they usually are; and we urge the President, when occasion permits, to appoint at least one economist to membership in each of the major commissions, and institute effective procedures for the review of the performance of the commissions.

3. To enhance the effectiveness of the Antitrust Division, we urge the Attorney General and the Assistant Attorney General in Charge of Antitrust to insist that every antitrust suit make good economic sense, and to institute semi-public conferences to assist in the formulation and frequent reevaluation of enforcement guidelines.

4. We recommend that the Department of Justice establish close liaison with the Federal Trade Commission at the highest levels, with a view toward fostering a harmonious policy of business regulation.

5. We recommend that the Department bring a series of strategic cases against regional price-fixing conspiracies, which we believe to be numerous and economically important.

6. We cannot endorse, on the basis of present knowledge of the effects of oligopoly on competition, proposals whether by new legislation or new interpretations of existing law to deconcentrate highly concentrated industries by dissolving their leading firms. But we urge the Department to maintain unwavering scrutiny of highly oligopolistic industries and to proceed under section 1 of the Sherman Act--which in our judgment reaches all important forms of collusion--in instances where pricing is found after careful investigation to be substantially noncompetitive.

7. The Department of Justice Merger Guidelines are extraordinarily stringent, and in some respects indefensible. We suggest a number of revisions in the accompanying Report.

8. We strongly recommend that the Department decline to undertake a program of action against conglomerate mergers and conglomerate enterprises, pending a conference to gather information and opinion on the economic effects of the conglomerate phenomenon. More broadly, we urge the Department to resist the natural temptation to utilize the antitrust laws to combat social problems not related to the competitive functioning of markets.

9. We recommend new legislation to increase the monetary penalties, at present largely nominal, for price fixing.

10. We urge a new policy for antitrust decrees. The Department should not seek the entry of regulatory decrees that envisage a continuing relationship with the defendant. Save in exceptional circumstances, all decrees should contain a near termination date, ordinarily no more than 10 years from the date of entry. And the Department should undertake a review of existing decrees to determine which should be vacated as obsolete or inappropriate.

11. The Expediting and Webb-Pomerene Acts should be repealed, and the Robinson-Patman Act substantially revised.

12. Mr. Alexander L. Scott dissents from certain parts of the Report and from certain of the above recommendations. Mr. Raymond H. Mulford dissents from two recommendations.

### REPORT OF THE TASK FORCE ON PRODUCTIVITY AND COMPETITION

The Task Force on Productivity and Competition submits its report on the problems which will be confronted by the new administration in this area, and the steps which we recommend to be taken. The report is presented under three general headings:

I. The Administration's Policy of Competition and the Role of the Antitrust Division and the Regulatory Commissions in This Policy.

II. Organization and Procedure in the Antitrust Division.

III. Recommendations for Change in Antitrust Policy.

Individual task force members would often change the emphasis of the Report, and larger differences are presented as dissent.

#### I. General Policy

##### A. Antitrust Policy

The American Way, as we are constantly told, is to rely upon competitive private enterprise to do most of the work of allocating resources to industries and firms, organizing production, and providing economic progress. We are constantly travelling a shorter distance down this Way, however: for good reason and for bad we have almost continuously expanded the governmental controls over economic life, and in recent years important restrictions have been placed upon private enterprise to protect the balance of payments. Some of the vast arsenal of public controls are unnecessary, and a large proportion of the necessary controls are excessively restrictive of competition. As one example, the safety of financial institutions is of course a major public concern, but this safety can often be achieved by insurance or similar devices, and hardly ever requires that competition be suppressed to the extent that the most incompetently managed institution will be prosperous, and hence safe.

The traditional American policy of seeking to minimize regulation of economic life is a profoundly wise policy, and deserves to be reasserted and implemented. Both logic and political expediency -- not always close allies -- dictate that economic freedom be subjected to the discipline of competitive markets. We believe, therefore, that the President should issue a general policy statement on competition and public regulation, to achieve at least three important purposes:

1. To establish the Antitrust Division as the effective agent of the Administration in behalf of a policy of competition, in intragovernmental groups, and before independent regulatory bodies.

2. To encourage and urge the regulatory bodies -- which cannot ignore the clear policy positions of the President even when his appointive power is dormant -- to enlarge the role of competition in their respective industries.

3. To revive and strengthen public support for the policy of competition, and to establish the bona fides of the Administration as the protector of both consumer and businessman.

An executive order or a major presidential address would be an appropriate vehicle for this declaration. Whether or not a formal statement commends itself, we believe that the correct policy is one of persistent and resourceful exploitation of competition wherever possible.

## 2. The Policy of Competition in the Regulated Industries

Our mandate to examine productivity and competition in the American economy compels us to brief examination of the work of the regulatory commissions themselves. The regulated industries comprise one-eighth or more of the economy in terms of income, and are too important to be omitted from our Report.

The tasks assigned to the regulatory agencies are various: to prevent monopoly pricing (as with telephone and pipelines); to prevent congestion (as with radio and television frequencies); to provide safety to savers (as with financial institutions); and so on. It is not possible for us here to examine these purposes critically, although it is notorious that in certain industries (such as motor trucking) there is no respectable case for economic regulation. There is widespread disenchantment with regulatory purposes as well as regulatory processes, and a general belief that excessive rigidity, expensive review of economically trivial details, and frequent failure to achieve any important results have characterized our regulatory efforts.

In two directions, we are convinced, there should be a major reorientation of the regulatory policy:

1. Entry of new firms should be encouraged wherever as absolute contradiction with regulatory goals is not involved. At present the practice is universally the opposite: to prohibit or ration with utmost severity the entrance of new firms.

2. Allow much freedom in price competition. The regulatory bodies should abandon minimum rate regulation whenever possible (and it is usually possible), and rely chiefly on maximum rate regulation.

Where rates are regulated, it is essential to make both changes: there is little merit in allowing additional firms to enter if they are not held to the test of unfettered competition with the existing firms.

We urge the Administration to pursue three complementary paths of reform in the regulated industries:

First, the commissions should have the merit of competition pressed upon them. Competition is not a matter of all or none, and the fact of regulation should not exclude competition as a force at each of a hundred points where it is relevant and feasible. If there must be only one railroad there can still be several truckers, several freight forwarders, and the possibility of inter-modal competition.

Second, the primary method of giving a larger role to competition is by appointing commissioners who understand and believe in a policy of competition. We believe that every regulatory body should have at least one economist as a commissioner. Quite aside from the implementation of the desire for more competition, this proposal has a decisive defense: economic regulation poses more economic than legal problems, and an economist knows more about economics than a non-economist. The economic triviality and irrelevance of much activity of the regulatory commissions is patent and inexcusable.

Third, the regulatory commissions are largely out of public control. Once in a decade or two, at most, a commission will be investigated by Congress. The Administration should explore methods of getting more meaningful and effective reviews than we now get. We do not know whether the best method is an enlarged Bureau of the Budget section, a national commission, the creation of academic review committees, or a special adviser to the President. The best method, however, is surely not infrequent, partisan Congressional review. The present rule of the regulatory bodies is undirected, unmeasured, and unevaluated.

## II. Organization and Procedure in the Antitrust Division

### A. The Utilization of Economic Knowledge

We anticipate little opposition to the proposition that the Antitrust Division make full and effective use of economists and their special skills. These skills are often necessary to understand the effects of economic practices (an example is market-sharing in fixed proportions), to assess the economic importance of individual cases, and to assist in devising remedies that will not shatter on economic realities. We endorse the policy of having a highly professional economist serving as adviser to the head of the Division, and a strong permanent staff of economists.

The problem is not the goal of an economically sophisticated antitrust policy, but its implementation. A division charged with the enforcement of a statute most of course be directed and largely staffed by lawyers. Unless there are substantial incentives to the staff to utilize economics -- whether by central direction, or vastly more powerfully, by demonstrated assistance in winning cases -- the non-lawyer will often be viewed by the lawyers as a mysteriously necessary obstacle to smooth operations. The Assistant Attorney General will have succeeded in making a truly major contribution to antitrust policy if he establishes the relevance of economic knowledge.

### B. The Development of Criteria for Classes of Cases (Guidelines)

When the Antitrust Division is confronted by a large number of similar cases -- and it must now be scanning many hundreds of mergers each year -- it will inevitably have rules to guide the numerous men who pass on individual cases. The question is not whether to have criteria or guidelines, but how to arrive at them.

We believe, for reasons we discuss below, that the present merger guidelines are questionable in important respects. Here we consider the procedures for formulating guidelines.

A set of rules for a class of cases will be desirable only if two conditions are fulfilled:

1. There are a large number of uncontroversial, easily identified cases. If there are not, the rules give little help to either business or the Division.

2. Controversial or objectionable cases cannot be repackaged to avoid scrutiny.

The way to determine whether mergers, for example, meet these conditions is to examine a large number of them in the light of legal and economic knowledge. The Antitrust Division will perform this task vastly better if it uses the large amount of professional expertise available outside the Division. We therefore recommend that the Division have semi-public conferences to explore difficult areas of policy, inviting legal and economic experts to propose or discuss guidelines. Some members of the task force would prefer to have formal notice and public hearings in establishing rules. If rules are adopted, a periodic review of them by the same procedure will be a useful method of conferring flexibility upon them. A specific application of this method is proposed below for mergers.

### C. The Role of the Federal Trade Commission

No review of antitrust policy would be complete that ignored the Federal Trade Commission, which is charged with enforcement of, among other statutes, the Clayton Act, of which Section 2, the Robinson-Patman Amendment, and Section 7, prohibiting mergers and acquisitions that may substantially lessen competition, are particularly important; and the Federal Trade Commission Act, whose operative provision, Section 5, forbids "unfair or deceptive acts or practices", a term that has been interpreted to embrace even more than the vast area of anticompetitive behavior proscribed by the Sherman and Clayton Acts, as well as consumer fraud and some "immoral" sales methods such as lotteries. As is evident, the Commission's jurisdiction largely overlaps that of the Antitrust Division.

In its antitrust work, the FTC has concentrated on price discrimination, on practices believed to oppress or coerce small dealers, and on mergers, especially vertical and conglomerate, and usually in industries such as food products, groceries, and cement--industries which by long-established understanding with the Antitrust Division have been assigned as the Commission's sphere of primary competence.

Unhappily, little that the Commission undertakes in the antitrust area can be defended in terms of the objective of maintaining and strengthening a competitive economy. Consider price discrimination. There is now an impressive body of literature arguing the improbability that a profit-maximizing seller, even one with monopoly power, would or could use below cost selling to monopolize additional markets. Yet, not only has the Commission continued to bring predatory price discrimination cases, but the alleged danger of predatory pricing remains a principal prop of its vertical and conglomerate antimerger cases. As for "secondary line" discrimination (that is, giving discounts to some dealers or distributors but not to others who compete with

them), the Commission has never attempted to differentiate those cases (if there are any) in which a monopolistic buyer is able to extract unjustified price concessions from his suppliers to the prejudice of his competitors from those in which discrimination is employed by oligopolistic sellers who wish to cut prices secretly,--and should be encouraged to do so--and those in which price differences (which the Commission tends to equate, erroneously, with discriminations) are not, in fact, discriminatory. Over the last eight years the Commission, often under the prodding of reviewing courts, has pulled some of the sting from enforcement of Robinson-Patman against secondary-line discrimination. It has demanded somewhat stronger proof of competitive injury. Its meeting-competition and cost-justification defenses have been rendered meaningful, and the provisions of the Act relating to advertising allowances and brokerage payments are, in general, no longer used to compel sellers to compensate for services that are not economically beneficial to the seller (such as advertising by tiny retail outlets or brokerage when a broker's services can be dispensed with). Although the retreat from per se rules against secondary-line discrimination has led to a general diminution of enforcement activity by the FTC (private suits continue, of course, and are discussed later) the Commission still brings many cases that impair, rather than promote, competition and efficiency. For example, the Commission has in recent years waged vigorous war against "functional discounts", which are discounts offered to middlemen who perform certain distributive functions (such as warehousing) that other middlemen, who are not given the discounts, do not perform. Moreover, as explained later in this Report, we can conceive of no case of discrimination in which the Sherman Act would not provide an adequate remedy--adequate, that is, to protect the interest in maintaining an effectively competitive economy--and so we view Robinson-Patman enforcement as inherently likely to be pushed beyond proper limits.

The efforts of the Commission to protect small dealers from allegedly unfair and coercive business practices constitute a dark chapter in the Commission's history. Much of this enforcement activity does not emanate in formal proceedings. What happens is that a dealer who is terminated, for whatever reason, is likely to complain to the Commission, knowing that the relevant Commission staff is well disposed toward "small business". The staff uses the threat of an FTC proceeding to get the supplier to reinstate the dealer, and if threats fail--usually they succeed--the FTC may file a complaint charging the supplier with having cut off the dealer because he was a price cutter, or for some other nefarious reason. Our impression, in sum, is that the Commission, especially at the informal level, has evolved an effective law of dealer protection that is unrelated and often contrary to the objectives of the antitrust laws. The Commission is supported in this endeavor by the Supreme Court's rulings that Section 5 of the FTC Act empowers the Commission to suppress practices that resemble antitrust violations.

With respect to the Commission's enforcement policy in the merger field, it is illuminating to compare the recent statements of Commission merger policy with the Department of Justice Merger Guidelines, discussed elsewhere in this Report. The Commission is even more aware, unlike the Department, it attaches a good deal of significance to the absolute size (independent of market share) of merging firms; to the alleged power that large firms have over small; and to the dangers of "price squeezes".

It will, for example, challenge virtually any acquisition by a cement producer of a ready-mix concrete company, virtually any substantial acquisition by a large food chain, etc. The Merger Guidelines are made of restraint compared to those promulgated by the Commission, which are as hard on economic theory as on mergers.

We conclude that substantial retrenchment by the Commission in the antitrust field is highly desirable. In addition to retrenchment (at least by stopping the increase of the Commission's appropriations), its resources devoted to regulating competition might be redeployed. The two principal possibilities are (1) consumer protection, and (2) economic studies utilizing the very broad fact-gathering powers vested in the Commission by its enabling legislation. Unhappily, either route could be followed in a way that endangered competition. An incompetent economic study can be influential on policy makers -- witness the influential 1948 FTC study which erroneously suggested that concentration was on the rise in American industry. Overzealous enforcement of consumer-protection legislation can also have errant results. We note that the application of consumer-protection law is almost always invoked not by consumers but by competitors, whose interest lies in protecting their market, not in giving consumers full information; and that elaborate requirements relating to packaging, safety, etc. can curtail consumer choice, limit competition, reduce the consumer's incentive to exercise care, and -- what is most serious -- impose substantial costs on society.

The Federal Trade Commission urgently needs a basic reform, but this need will be difficult to fulfill. Quite apart from the fact that there are no vacancies on the Commission, any dramatic or far-reaching Presidential-inspired reforms would run up against the long tradition of regarding the independent agencies in general -- and the FTC in particular -- as "arms of the Congress." That has at times meant an office of economic opportunity for Congressmen; more important, it means that a strong showing of Presidential interest in the operations of the Commission will not be welcome on the Hill.

Perhaps the best short-run path of improvement runs through the offices of the Attorney General and the Assistant Attorney General in charge of Antitrust. Since the jurisdictions of the Commission and of the Antitrust Division are so largely overlapping, no one could object to the establishment between the Commission and the Division of close liaison at the highest levels. Indeed, it is something of a wonder (though explicable in terms of bureaucratic rivalry) that such liaison has been wholly lacking heretofore; the only coordination between the agencies is at very low levels, and consists largely of haggling over who shall sue in cases where both agencies are interested. Especially at the beginning of a new Administration, it should be quite feasible, as well as wholly appropriate, for the Attorney General and Assistant Attorney General to establish a close cooperative relationship with the Chairman of the Commission. We think it likely that the Commission will pay some heed to the Department's views, if forcefully expressed, on antitrust and trade-regulation policy.

### III. Recommended Changes in Antitrust Policies

The general policies of the Antitrust Division are profoundly good, and we propose no major change in its emphasis or direction of policy. In fact, the main thrust

of the following recommendations is that certain recent developments of policy or doctrine should not be allowed to divert the agency from its basic task of striking down conspiracies and mergers in restraint of trade.

#### A. Price-Fixing

The price-fixing cases of the Antitrust Division are its bread and butter, and understandably its staff would prefer more cake. We emphasize the great economic and social importance of continued, vigilant, aggressive seeking-out and conviction of conventional price-fixers. Every victory weakens the efficiency of undetected collusion in that area of economic life. We strongly recommend the bringing of a series of strategic cases against regional conspiracies, which we believe to be numerous and economically important.

#### B. Concentration and Oligopoly

Oligopoly -- the industry composed of a small number of independent enterprises -- undoubtedly presents the most difficult problems in a policy for competition. The difficulties arise because of a combination of three circumstances. The first is factual: there are many important industries in our economy whose structure is oligopolistic -- how large a number depends upon what a "small number of firms" means. The second is interpretive: the economists have not succeeded in fully identifying the characteristics of an industry which determine whether it will behave competitively or monopolistically. The third is the matter of action: if firms in an oligopolistic industry are convicted of collusive behavior, must one press for a remedy so radical as dissolution in order to stop future repetitions of the offense? (And should the standards of permissible concentration be wholly different for pending mergers than for established enterprises?)

The circumstances which determine whether or not the firms in an oligopolistic industry will usually behave more or less competitively (seeking by independent actions to improve their individual profits at the cost of rivals' profits, with the eventual general erosion of unusual profits) are partly known:

1. The easier (quicker and cheaper) new firms can enter the industry, the smaller and more short lived will be the monopolistic restrictions.
2. The more elastic the demand for the product of the oligopolistic industry the less the reward from restrictions of output below the competitive level, and hence the less the inducements to act collusively. This in turn usually depends upon what alternative products the buyers may turn to.
3. The larger the effective number of firms the less the probability of collusive behavior -- collusion increases in expense (including probability of detection) as numbers increase. However, a given number of firms is more likely to result in collusion, the more concentrated is production in the hands of a few firms. If we correct for this and take the effective number of rivals to be the number of rivals of equal size which would produce the same competitive situation as the firms (not of equal size) actually in the industry, the effective number may be very roughly estimated at twice the number there would be if all firms were as large as the largest in the industry.



That is, if the largest firm has 1/5 of the industry's output and the remaining firms fall off in size regularly, the effective number of firms is of the order of magnitude of 10. By this is meant that the concentration in the industry is equivalent to what would exist if there were 10 firms of equal size.

There are other influences which probably but less certainly affect the probability of competitive behavior. One of these is the size of buyers: larger buyers, for a variety of reasons including possibility of backward integration, make for more competitive prices.

Numerous statistical studies have been made of the relationship between concentration and rates of return on investment, and these studies generally yield positive but loose relationships: concentration is not a major determinant of differences among industries in profitability, although it may sometimes be a significant factor. It appears also to be true that somewhere between five and ten effective firms (i.e., a large firm with a share of 1/3 to 1/5) are usually enough to insure substantial elimination of the influence of concentration upon profitability.

Concern with oligopoly has led to proposals to use the antitrust laws (perhaps amended) to deconcentrate highly oligopolistic industries by dissolving their leading firms. We cannot endorse these proposals on the basis of existing knowledge. As indicated, the correlation between concentration and profitability is weak, and many factors besides the number of firms in a market appear to be relevant to the competitiveness of their behavior. While a flat condemnation of oligopoly thus seems to us unwise, we commend to the Antitrust Division a policy of strict and unrelenting scrutiny of the highly oligopolistic industries. If, in any of these industries, pricing is found after careful investigation to be substantially noncompetitive, the Division will have a clear basis for proceeding against the leading firms under Section 1. Collusion that can be incontrovertibly inferred from behavior (such as persistent, stable price discrimination in the economist's sense) should not bring immunity from the Sherman Act, and we are confident that structural remedies will be sanctioned by the courts in cases where, due to number of firms and the other conditions of the market, lesser remedies are likely to be unavailable. In assessing the gain from such structural remedies, account should be taken of any reduction in efficiency which the remedy entails.

The concern with oligopoly is also quite visible in the Department of Justice's most recent innovation, the Merger Guidelines, to which we now turn.

#### C. Mergers and the Guidelines

The present merger Guidelines impose stringent restrictions upon the relative sizes permitted to companies which desire to merge. The provision of these percentages is reinforced by a definition of the market (within which shares of companies are reckoned) so loose and unprofessional as to be positively embarrassing. We propose to reverse this emphasis: not to tell companies which mergers are forbidden, but which mergers are permitted. We are persuaded that this orientation better serves the interests of both business and the Antitrust Division. Before we turn to the methods by which more appropriate Guidelines for mergers are achievable, we shall briefly discuss the present Guidelines, and indicate our reasons for dissatisfaction with them in their present orientation.

**Market Definition.** The delineation of a relevant market within which to appraise the lawfulness of a merger is

crucial, for if the market is drawn narrowly enough, virtually any merger can be made to seem monopolistic in its effects. Unfortunately, as they are presently drafted the Guidelines seem to invite a substantial degree of market gerrymandering, especially in delineating regional or local markets. The Guidelines' test of whether a product is sold in less than a national market is loose. Any group of competing sellers in the industry is a relevant market, unless the defendant can show that there is no "economic barrier" preventing other sellers from selling in the particular area. Such a barrier may consist of freight costs, customer inconvenience, customer preference for the brands presently sold in the area, or the absence of good distribution facilities.

This is a misleading test. An industry may be riddled with the kind of "barriers" cited in the Guidelines and yet still not contain any meaningful local markets. An example will illustrate. Assume that the price of steel bars is \$2 in Minnesota and \$1.60 in Chicago, and the cost of shipping the bars from Chicago to Minnesota is 41 cents. On these facts, it is plain that the Minnesota sellers could not raise their price significantly without immediately losing their business to the Chicago sellers. Minnesota is thus not a meaningful local market even though, at the existing price, freight costs do impose an effective economic barrier against the Minnesota sellers. Moreover, additional firms will establish production or distribution facilities in Minnesota if it becomes profitable to do so. The same analysis can be extended to the other barriers discussed in the Guidelines.

In criticizing the test of "economic barrier", we do not mean to deny the difficulty of devising rules of market definition that will be at the same time simple and sensible. This is most probably not an area in which Guidelines provide a useful enforcement tool. If there are to be Guidelines, though, they should at least not misstate the applicable economic theory. It would, accordingly, be a decided improvement if the Guidelines were revised (at a minimum) to explain that a distant seller of a product must be included in the local market if a modest price increase in the local area—a price increase unrelated to his costs—would bring him in forthwith.

**Horizontal Mergers.** The provisions of the Guidelines governing horizontal mergers—that is, mergers between direct competitors—are extraordinarily strict. If a market is "highly concentrated" (defined as where the 4 largest firms account for at least 75 percent of the sales in the market), then a merger between two firms, each of which has a 4 percent market share, will be challenged; and if the acquiring firm has a share as large as 15 percent, then the acquired firm need have only a 1 percent share for the merger to be challenged. Different levels of permissible size are stated for less concentrated industries, and some account is taken of the trend of concentration.

We agree with the basic premise of the horizontal-merger provisions of the Guidelines that market-share percentages are the appropriate touchstone of illegality for such mergers. We would favor levels of concentration modestly lower than those now used (but differently structured), with the purposes of (1) allowing all mergers below the Guidelines levels, and (2) not prohibiting, but reviewing, those above the critical level, with an implied probability that the more a proposed merger lies above the level of automatic approval, the less the probability of its acceptance. We discuss below the procedure that should be followed better to utilize existing knowledge in fabricating the Guidelines.

**Vertical Mergers.** A merger that involves the acquisition not of a competitor but of a customer or a supplier is a vertical merger, and the present Guidelines contain strict provisions limiting such mergers. For example, if the supplying firm in the merger has a 10 percent share of its market and the purchasing firm has 5 percent of the purchases in that market, the merger will be challenged.

Our task force is of one mind on the undesirability of an extensive and vigorous policy against vertical mergers: vertical integration has not been shown to be presumptively noncompetitive and the Guidelines err in so treating it. Within this area of agreement there are two positions around which the task force members cluster.

The one position asserts that many, and perhaps most, vertical mergers which do not have direct horizontal effects are innocuous, but that in certain situations a vertical merger will have anti-competitive effects. These situations include: increases in the capital or other requirements for an integrated firm may reduce the possibility of new entry; or price discrimination may be implemented when a monopolist integrates forward or backward. A showing that an anti-competitive effect of these sorts exists is essential before a vertical merger is challenged.

The other position denies that a vertical merger has the potentiality for economic harm in the absence of horizontal effects. To some of our members, it is wholly implausible that vertical integration places entering firms at a disadvantage. A seller who fails to minimize his input and distribution costs will be undersold by his competitors: he cannot afford to sell to or buy from an affiliate if there are more efficient alternative means of supply and distribution available to his competitors (and to him). Even if the seller is a monopolist, the desire to maximize profits will lead him to seek the most efficient methods of supply and distribution, and there will be ample opportunities for non-affiliated suppliers and outlets to compete for his patronage. Except in the case of the monopolist who cannot discriminate in price effectively without control of his outlets, vertical integration will be initiated and maintained only if and so long as it is justified by the cost savings it permits. It is not a method of extending monopoly power.

The two positions coalesce on one policy conclusion: vertical mergers should not be forbidden as a class.

**The Conglomerate Merger.** The large conglomerate enterprise with an aggressive acquisition policy has only recently become prominent and newsworthy. \*\*\*

Antitrust law has seemed to some a convenient weapon with which to attack large conglomerate mergers. If one interprets "elimination of potential competition", "reciprocity", and "foreclosure" as threats to competition, one can always bring and usually win a case against the merger of two large companies, however diverse their activities may be. These are often makeweights. The economic threat to competition from reciprocity (reciprocal buying arrangements) is either small or nonexistent: monopoly power in one commodity is not effectively exploited by manipulating the price of an unrelated commodity. The argument advanced against the simplistic treatment of vertical mergers—essentially that one cannot use the same monopoly power twice—also challenges the fears of reciprocity.

Potential competition, on the contrary, can be a decisive limitation on the exercise of market power, and a merger which eliminates an imminent new competitor is anti-competitive. If entry into a field is relatively easy,

however, there are a vast number of potential entrants and the elimination of one or a few has no effect. If entry is difficult, and only a select few firms are capable of entry and on the second likely to enter, their independence should be preserved. The identity of potential entrants should not be established by introspection. If the producer of X is truly a likely entrant into the manufacture of Y, the likelihood will have been revealed and confirmed by entrance into Y of other producers of X (here or abroad), or by the entrance of the firm into markets very similar to Y in enumerable respects.

We seriously doubt that the Antitrust Division should embark upon an active program of challenging conglomerate enterprises on the basis of nebulous fears about size and economic power. These fears should be either confirmed or dispipated, and an important contribution would be made to this resolution by an early conference on the subject. If there is a genuine securities market problem, probably new legislation is necessary. If there is a real political threat in giant mergers, then the critical dimension should be estimated. If there is no threat, the fears entertained by critics of the conglomerate enterprises should be allayed. Vigorous action on the basis of our present knowledge is not defensible.

The central task of the Antitrust Division is to preserve competition in the American economy. This is a splendid and challenging task and deserves and requires the full resources of the Division. We shall be much the losers if we compromise the discharge of this central task by burdening the Division also with tasks such as the combating of organized crime or the achievement of general political goals.

**The Use of Conferences.** We have proposed that conferences be used to revise the Guidelines and to identify the problems, if any, created by the large conglomerate enterprise. The conference will allow the Antitrust Division to utilize the expertise and wide factual knowledge of economists, lawyers, securities analysts, and other groups without the laborious machinery of formal hearings. We strongly recommend that before such conferences are held, leading students and exponents of particular positions be asked to prepare position statements which present explicit and specific theories and evidence. Then the conference members will have specific questions to address and specific views to combat or support.

#### D. Antitrust Sanctions

The cutting edge of law is not the abstract statement of a legal duty but the sanction provided for its nonperformance, and that is true of the antitrust laws as of other systems of legal obligation. It is essential that those laws clearly and accurately define and forbid the practices that impair competition and efficiency but it is equally essential that the sanctions for violation be effective in compelling compliance and with a minimum of undesirable side effects.

In testing the antitrust sanctions by this standard, it will be helpful to distinguish two purposes of sanctions: that of preventing (or, if it has already occurred, undoing) a specific violation; and that of deterring violations that might not always be detected.

Sanctions of the first type--remedial sanctions--suffice where there is no problem of detection (e.g., in the case of an illegal merger). But take the case of price-fixing. Price-fixing conspiracies can be, and one suspects are, successfully concealed. A sanction that merely prevented the continuation of the conspiracy, such as an injunction, or one that merely restored the losses of the injured consumer, such as ordinary damages, would in these circumstances probably be insufficient. For in deciding whether to comply with the law, a seller would discount the very modest (or negligible) injury to him if his participation in a price-fixing conspiracy was detected, and he was required to stop and to pay actual damages, by the considerable probability that he would escape detection altogether; and he could conclude that he had little to lose by participating. That a punishment by fine or imprisonment is an appropriate sanction for illegal price-fixing, it provides deterrence, as the purely remedial sanction does not.

But the deterrent sanction in antitrust is weak. A price fixer can be imprisoned and fined but prison terms are almost never imposed in price-fixing cases and when they are, they are nominal in length; and the maximum fine of \$50,000 will deter only a very small corporation. The possibility of a private treble-damage suit doubles: provides additional deterrent effect, but there are serious limitations: judges are reluctant to authorize damage awards that seriously hurt a company; damages are difficult to prove in price-fixing cases; and most important, the injury caused by a price-fixing conspiracy is often so widely diffused (for example, among millions of consumers) that no one has an incentive to bring a suit. The government itself can sue for damages only when it was the victim of the unlawful conspiracy.

If concealable offenses under the antitrust laws are to be effectively deterred, either the resources devoted to the detection of such offenses must be vastly augmented--and there are obvious limitations to this route--or the fines must be increased to a point where they will give even the large corporation considerable pause before participating in (or condoning its officers' individual participation in) an illegal conspiracy. Precedent for much more severe sanctions can be found abroad. The European Economic Community, for example, may impose penalties of up to \$1,000,000, or, in the case of willful violations, up to 10 percent of annual sales. We have not attempted to determine the appropriate level of antitrust fines, but we urge the Department of Justice to accord high priority in its legislative program to the upward revision of these penalties.

The creation of a more realistic scheme of antitrust fines would enable a long-overdue reexamination of the punitive aspect of the private antitrust suit. It is anomalous that private plaintiffs who have done nothing to uncover or prove an antitrust violation (the usual case) should be permitted to claim treble damages on the basis of a judgment obtained by the Antitrust Division. In such circumstances, the excess over actual damages and costs represents a pure windfall to the private plaintiff. Today, one can defend this arrangement on the ground that it furnishes an element of added deterrence which is necessary in light of the inadequacy of the existing criminal fines. But that ground would be removed if the fines were revised to a more appropriate level, and a more rational scheme of deterrence would become feasible. We are also deeply concerned that private treble damage suits provide undesirable opportunities for harassment

and the furtherance of a variety of anticompetitive practices.

With regard to remedial sanctions, the principal question involves the undesirable side effects that frequently accompany a poorly formulated decree. Ideally--and it is an attainable ideal--an antitrust decree should be a "one shot" affair: dissolving the monopoly, or diverting the acquired assets, or terminating the tying-point system, etc. The antitrust laws were never intended to be a system of continuing regulation. Antitrust policy has as its basic principle the preservation of a competitive environment within which individual enterprises are free from continuing supervision. When a decree says, in effect, "Let us return to the court, or give the power to the Antitrust Division, to adjudicate the propriety of various behavior of the defendant for years to come," one can be sure that the suit has failed in its purpose of restoring competitive conditions. Nor is the Department equipped to function as a regulatory agency, and it is not likely to escape that common pitfall of economic regulation, the suppression of competition. Nonetheless, such decrees are frequently entered, especially by consent of the parties in cases where the Department (or the Federal Trade Commission, to which these remarks apply with equal, if not greater, force) is aware of its litigation prospects and wishes to salvage something from the investment of enforcement resources.

For the future, we urge that the Department adopt a firm policy of not proposing or accepting decrees that envisage a continuing, regulatory relationship with the defendant. A correlative policy that we suggest is that every decree contain a definite and near-termination date, ordinarily no more than 10 years from the date the decree is entered. Such a principle would compel the Department to devise decrees that restore competition rather than establish regulation, as well as assure that decrees do not remain in effect long after the relevant industrial conditions have changed (such as with the 1920 decrees against the meat packers).

Little is known of the extent to which a large number of past decrees are still operative, and if operative, of any real value in protecting competition. We recommend, therefore, some such procedure as this in dealing with outstanding decrees:

1. The past decrees still running should be compiled, and the types and duration of prescribed conduct summarized.
2. The current relevance of the decrees, or at least those running against large industries, should be examined--presumably by the economics section of the Antitrust Division.
3. The older (say 25 years and over) and obsolete younger decrees should be vacated.

#### E. Recommended Changes in Antitrust Statutes

Several legislative reforms could improve substantially the functioning of the antitrust laws. We have recommended above a substantial increase in the maximum level of fines. In addition, we recommend immediate repeal of the Expediting Act. The low quality of many Supreme Court antitrust opinions can be traced in no small measure to the fact that direct appeal frequently requires the Supreme Court to pass on an extensive record without the benefit of the winnowing and focusing process involved in an intermediate appeal. The Supreme Court itself has noted that direct appeal is unsatisfactory. If repeal is politically impossible, then an amendment that would drastically limit the number of direct appeals would be desirable.

The Webb-Pomerene Act should also be repealed. The creation of cartels in foreign commerce is antithetical to the underlying theory of the Sherman Act. The danger that exempted cooperation between competitors in the export field will lead to illegal cooperation at home is too great to be viewed as merely a potential abuse. Nothing in U. S. domestic competition policy or foreign economic policy warrants the retention of this outmoded approach to international competition.

On the agenda for long-term legislative reform must be the Robinson-Patman Act. The Act leads to rigidity in distribution patterns and to uniform, inflexible pricing. In industries with few sellers, price reductions are more likely to be made if they can be made covertly. Such limited reductions often lead over time to generally lower prices. Thus, a prohibition against price discrimination may preclude the kind of competition that is most likely to lead to lower prices in oligopolistic industries. We view the Federal Trade Commission's tendency in recent times to relax the enforcement of the Act as a desirable but, so

long as private treble damage actions are available, an inadequate reform.

In reforming the Robinson-Patman Act, two kinds of amendment are desirable. First, the general prohibition against price discrimination in Section 2(a) should be made more supple by broadening the meeting competition and cost justification defenses so as to make them more readily available for sellers whose price differentials do not stem from a predatory purpose and do not injure competition in the market place (as opposed to disadvantaging individual firms). Second, the more absolutist brokerage, payments and services prohibitions of subsections (c), (d) and (e) should be repealed while making clear that the standards of amended subsection (a) remain applicable to practices that would previously have been treated under those repealed subsections. The Task Force recognizes the political support that the Robinson-Patman Act retains in some quarters and the danger that an attempt to amend the Act might give particular interests an opportunity to add even more restrictive provisions. As a consequence, some of our members view amendment of the Act as a long-term, albeit important, reform; others wish to leave it alone.

**DEFENDANT'S  
EXHIBIT**

46

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION

UNITED STATES OF AMERICA,

Plaintiff,

v.

GENERAL DYNAMICS CORPORATION;  
THE UNITED ELECTRIC COAL  
COMPANIES; and FREEMAN COAL  
MINING CORPORATION,

Defendants.

CIVIL ACTION

NO. 67 C 1632

ANSWERS TO INTERROGATORIES  
OF THE DEFENDANTS

Interrogatory 1

Define the following terms or phrases as used  
in the complaint:

(a) "western Indiana" (Par. 7)

Answer: "Western Indiana" is defined as approximately the  
western two-thirds to three-quarters of the State of Indiana.

(b) "western Kentucky" (Par. 7)

Answer: "Western Kentucky" is defined as approximately  
the western one-half of the Commonwealth Kentucky.



(c) "western Tennessee" (Par. 7)

Answer: "Western Tennessee" is defined as approximately the western one-third to one-half of the State of Tennessee.

(d) "eastern Missouri" (Par. 7)

Answer: "Eastern Missouri" is defined as approximately the eastern one-third to one-half and the south central portion of the State of Missouri.

(e) "eastern Iowa" (Par. 7)

Answer: "Eastern Iowa" is defined as approximately the eastern one-half to two-thirds of the State of Iowa.

(f) "southwestern and central Wisconsin" (Par. 7)

Answer: "Southwestern and central Wisconsin" is defined as approximately the entire State of Wisconsin with the exception of the eastern one-quarter to one-third of the State which is situated to the west of Lake Michigan and with the exception of the northwest portion of Wisconsin which is situated to the south of Lake Superior.

(g) "southeastern Minnesota" (Par. 7)

Answer: "Southeastern Minnesota" is defined as approximately the southeastern quarter of the State of Minnesota and includes, principally, the cities of St. Paul and Minneapolis and their environs.

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(j) "coal reserves which can be recovered" (Par. 9)

Answer: This phrase means coal reserves which can be mined, that is "recovered," under present and future technological capabilities.

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#### Interrogatory 6

Does plaintiff contend that there are other appropriate "sections of the country" (within the meaning of Section 7 of the Clayton Act) within which to test the legality of the challenged acquisitions of UEC stock? If so, specifically define each such area and state the facts and identify the data upon which plaintiff relies in supporting each such contention.

Answer: The plaintiff does not at this time contend that there are other appropriate sections of the country within which to test the legality of the acquisition of UEC by GD.

#### Interrogatory 7

With reference to Paragraph 8 of the Complaint, for each "section of the country" designated by plaintiff as "appropriate" in answer to Interrogatories 4 through 6, state which, if any, of the following fuels plaintiff contends do not compete with bituminous coal in such "section of the country" in "providing a dependable and low cost source of energy," and state the facts and identify the data upon which plaintiff relies in supporting such contention:

- (a) Gas
- (b) Oil
- (c) Nuclear energy
- (d) Lignite
- (e) Water

Answer: The answer to this question is now being investigated by the plaintiff. However, the plaintiff directs the defendants' attention to the Keystone Coal Buyers Manual 1967, at pages 243-248, 250, 254-258, 269 and 273-274, and to the National Coal Association's Bituminous Coal Facts 1966, at pages 85-87 and 90.

### Interrogatory 8

Does plaintiff contend that the "Eastern Interior Coal Province sales area" is an area anywhere within which coal mined at any location in the Eastern Interior Coal Province is able to compete with coal mined at any other location in the Eastern Interior Coal Province?

- (a) If so, state the facts and identify the data upon which plaintiff relies in supporting this contention.

Answer: The plaintiff contends "that approximately 80 per cent of the bituminous coal consumed in the Eastern Interior Coal Province sales area was produced in the Eastern Interior Coal Province." In support of this allegation, the answer to Interrogatory 3(c), above, is herein fully incorporated.

- (b) If plaintiff does not so contend, for each of the mines in Illinois, Indiana and Kentucky listed in Appendix A, attached hereto,
- (1) Identify every other mine in the list with which such mine does or can compete, and the name and location of customers for which such mines do or could compete.

- (2) Identify every other mine in the list with which such mine does not or cannot compete.
  - (3) With respect to each mine in the list owned by Freeman or UEC, identify every other mine not included in the list with which plaintiff contends such Freeman or UEC mine does or can compete, and the name and location of customers for which such Freeman or UEC mine and such other mines as are named do or could compete.
- (c) For each answer to Interrogatory 8(b)(1), (2) and (3), state the facts and identify the data upon which plaintiff relies in supporting its answers.

Answer: The plaintiff has at present no information in response to Interrogatory 8(b) and (c).

Interrogatories 9, 10, 11, 12, 13, 14 and 15

13. Identify the twenty largest (in terms of total tons produced from mines within Illinois) coal producers operating mines within the State of Illinois in 1967 and, for each, state total nationwide production, production from mines within the Eastern Interior Coal Province, and production from mines within the State of Illinois, all for the year 1967.

14. With reference to Paragraph 19 of the Complaint, identify all coal producers referred to in the answers to Interrogatories 9 through 13, which plaintiff contends are "leading" producers and state the facts upon which plaintiff relies in supporting each such contention.

15. With reference to Paragraph 19 of the Complaint, identify all coal producers referred to in the answers to Interrogatories 9 through 13, which plaintiff contends are not "leading" producers and state the facts upon which plaintiff relies in supporting each such contention.

Answer to Interrogatories 9, 10, 11, 12, 13, 14 and 15: The schedule entitled "REPORT OF MINE PERFORMANCE . . . JANUARY THROUGH SEPTEMBER 1966 AND 1967 FOR ILLINOIS, INDIANA AND WEST KENTUCKY, BY DISTRICTS," which was prepared by the Mid-West Coal Producers Institute, Inc., sets forth tonnage figures of the leading producers. A copy of this schedule is attached to Plaintiff's Answers to the Defendants' Interrogatories and is herein fully incorporated. Supplemental answers will be made when and if additional information is obtained.



Interrogatory 17

Does plaintiff contend in this action that any competitor of any of the defendants has been or will be adversely affected or disadvantaged in its ability to compete by reason of the challenged acquisition of UEC stock? If plaintiff so contends:

- (a) Identify each such competitor and state with which defendant or defendants such competitor competes.
- (b) For each competitor listed in answer to Interrogatory 17(a), describe each "line of commerce" and each "section of the country" (within the meaning of Section 7 of the Clayton Act) in which such competitor's ability to compete has been or will be adversely affected or disadvantaged.
- (c) For each such competitor identified in answer to Interrogatory 17(a), state the manner in which, and the nature and extent to which such competitor's ability to compete has been or will be adversely affected or disadvantaged in each "line of commerce" and "each section of the country" described in answer to Interrogatory 17(b).
- (d) State the facts and identify the data upon which plaintiff relies in supporting its answers to Interrogatory 17(a) through 17(c).

- (e) State the name, address, firm and position of each person (other than employees of plaintiff) known by plaintiff to be in possession of evidence or other information concerning any adverse effect or disadvantage which plaintiff contends the challenged acquisitions have had or will have upon any competitor of any defendant.

Answer: The plaintiff has at present no information in response to Interrogatory 17(a)-(e).

Interrogatory 18

State the name, address, firm and position of each officer or employee of any competitor of any defendant interviewed or inquired of by plaintiff or on plaintiff's behalf who has advised that his firm:

- (a) Has been adversely affected or disadvantaged in its ability to compete by reason of the challenged acquisitions of UEC stock.
- (b) Has not been adversely affected or disadvantaged in its ability to compete by reason of the challenged acquisitions of UEC stock.
- (c) Will be adversely affected or disadvantaged in its ability to compete by reason of the challenged acquisitions of UEC stock.
- (d) Will not be adversely affected or disadvantaged in its ability to compete by reason of the challenged acquisitions of UEC stock.

Answer: The plaintiff has at present no information in response to Interrogatory 18(a), (c) and (d). The plaintiff's response to Interrogatory 18(b) is as follows:

1. On October 12, 1966, John T. Cusack was informed by H. B. Lee, vice president-sales, Peabody Coal Company, 301 North

Memorial Drive, St. Louis, Missouri, that the acquisition of UEC by GD will probably have no effect on the competitive position of Peabody. In regard to the competitive position of Peabody please see United States v. Peabody Coal Company et al., Civil Action No. 67 C 1621 (N.D. Ill.), and the Final Judgment entered on October 23, 1967.

2. On October 11, 1966, John T. Cusack was informed by W. B. Buchanan, Jr., president of Old Ben Coal Corporation, 10 South Riverside Plaza, Chicago, Illinois, that he did not feel that UEC's acquisition by GD would harm his company.

3. On October 10, 1966, John T. Cusack was informed by Henry C. Woods, president of Sahara Coal Co., Inc., 59 East Van Buren Street, Chicago, Illinois, that he was not concerned about UEC's acquisition by GD.

Interrogatory 20

With reference to Paragraph 20 of the Complaint, state the date after which plaintiff contends UEC and Freeman were no longer "direct and substantial competitors in the sale of bituminous coal" and state the facts and identify the data upon which plaintiff relies in supporting its contention.

Answer: The plaintiff has at present no information in response to this Interrogatory other than to state that on August 4, 1967, Frank Nugent, then president of UEC and Freeman, stated in Washington, D.C. to officials of the United States Department of Justice, Antitrust Division, that in 1966 GD obtained managerial control of UEC. The plaintiff further notes that by December of 1966 GD had acquired at least 90% of the outstanding shares of UEC and shortly thereafter UEC became a wholly owned subsidiary of GD.

Interrogatory 21

With reference to Paragraph 20 of the Complaint, does plaintiff contend that all of the approximately 53% of Freeman's dollar sales and the approximately 61% of UEC's dollar sales which are alleged to have been to the same customers in 1965 were sales that were made, or could have been made, in competition with each other?

- (a) If plaintiff does not so contend, identify, by name and location of customer, location of receiving plants and tonnage involved, which of such sales were made, or could have been made, in competition with each other.
- (b) If plaintiff does not so contend, identify, by name and location of customer, location of receiving plants and tonnage involved, which of such sales were not made, or could not have been made, in competition with each other.

- (c) State the facts and identify the data upon which plaintiff relies in supporting its answers to Interrogatory 21, and, if answered, Interrogatories 21(a) and 21(b).

Answer: The plaintiff has at present no information in response to Interrogatory 21.

### Interrogatory 23

State the name, address, firm and position of each officer or employee of any customer of any defendant interviewed or inquired of by plaintiff or on plaintiff's behalf who has advised that his firm:

- (a) Has, by reason of the challenged acquisitions of UEC stock, been deprived of actual competition between Freeman and UEC.
- (b) Will, by reason of the challenged acquisitions of UEC stock, be deprived of actual competition between Freeman and UEC.
- (c) Has not considered Freeman and UEC as actual competitors. In addition, for each person identified, state the reasons given, if any, why such person so advised.
- (d) Has, by reason of the challenged acquisitions of UEC stock, been deprived of potential competition between Freeman and UEC.
- (e) Will, by reason of the challenged acquisitions of UEC stock, be deprived of potential competition between Freeman and UEC.
- (f) Does not consider Freeman and UEC as potential competitors. In addition, for each person identified, state the reasons given, if any, why such person so advised.

Answer: The plaintiff has no information at this time in response to Interrogatory 23(a)-(f).



Interrogatory 26

With reference to Paragraph 23(c) of the Complaint, does plaintiff contend that as a result of the challenged acquisitions of UEC stock there has been an increase in concentration in the production and sale of bituminous coal among companies other than defendants? If so, describe the nature and extent of such increased concentration, identify the companies involved, and the manner by which the challenged acquisitions of UEC stock increased such concentration. In addition, identify the data upon which plaintiff relies in supporting its answer.

Answer: The plaintiff has at present no information in response to Interrogatory 26.

Interrogatory 27

With reference to Paragraph 23(c) of the Complaint, does plaintiff contend that the challenged acquisitions of UEC stock may increase concentration in the production and sale of bituminous coal beyond the increase in concentration, if any, which would occur if UEC and Freeman were one company? If so, state the facts and identify the data upon which plaintiff relies in supporting such contention.

Answer: The plaintiff has at present no information in response to Interrogatory 27.

Interrogatory 30

With respect to the allegation in Paragraph 19 of the Complaint that "the bituminous coal industry is highly concentrated among the leading producers due in large part to mergers" describe what other causes there have been for the alleged degree of concentration.

Answer: The plaintiff has at present no information in response to Interrogatory 30.

Interrogatory 37

Does plaintiff contend in this action that the election to the Board of Directors of UEC on October 30, 1959, of representatives of Material Service Corporation and Freeman Coal Mining Corporation had any effect upon competition in any "line of commerce" in any "section of the country" (within the meaning of Section 7 of the Clayton Act)?

- (a) If so, state the manner, nature and extent of such effect on competition.
- (b) If so, state the name, address, firm and position of each person (other than employees of plaintiff) known by plaintiff to be in possession of evidence or information concerning the matters set forth in plaintiff's answer to Interrogatory 37(a).

Answer: The plaintiff does not know the answer to this Interrogatory at this time.

Interrogatory 44

Does plaintiff contend that UEC can, at the present time, purchase additional coal reserves (other than abutting or fill-in acreage) recoverable through strip mining

operations within those reserves identified in response to Interrogatory 42? If so, state their location by County and State and, for each field of reserves by County, state:

- (a) Their exact location.
- (b) The coal seam or seams involved and the amount (in tons) recoverable from each seam.
- (c) The average overburden covering such reserves.
- (d) The average seam thickness of such reserves.
- (e) The average overburden to seam thickness ratio of such reserves.
- (f) The average sulphur content (in percent) of such reserves.
- (g) The average ash content (in percent) of such reserves.
- (h) The average moisture content (in percent) of such reserves.
- (i) The average BTU rating of such reserves.
- (j) The party or parties from whom they can be acquired.
- (k) The approximate cost (in dollars) of acquisition.
- (l) Which, if any, present or potential customers of UEC could be served by such reserves.
- (m) Which, if any, present or potential customers of Freeman could be served by such reserves.

Answer: The answer to Interrogatory 42, above, is herein fully incorporated.

#### Interrogatory 45

Since, 1959, has any coal producer in Illinois, Indiana or Kentucky acquired or gained control of a new field of coal reserves mineable by stripping operations and exceeding

10,000,000 tons when assembled, excluding reserves so obtained by way of merger or combination with another coal producer? If so, for each such field of reserves state:

- (a) The name of the producer involved.
- (b) The date of such acquisition or control.
- (c) The exact location of such reserves and the amount (in tons) of coal recoverable.

Answer: The plaintiff does not know the answer to this Interrogatory at this time.

#### Interrogatory 46

Does plaintiff contend that UEC can mine its Industry Field strip reserves in Illinois and competitively market the coal produced? If so, state:

- (a) The approximate time by which such mining could be undertaken.
- (b) Which, if any, present or potential customers of UEC could be served by such coal.
- (c) Which, if any, present or potential customers of Freeman could be served by such coal.

Answer: The plaintiff does not know the answer to this Interrogatory at this time.

#### Interrogatory 50

Does plaintiff contend that UEC's competitive viability can be determined without reference to:

- (a) The amount of coal reserves presently owned or controlled by UEC.
- (b) The amount of coal reserves already committed to existing coal supply contracts.

- (c) The geographic location of the coal reserves presently owned or controlled by UEC.
- (d) The average sulphur content of such reserves.
- (e) The average ash content of such reserves.
- (f) The average moisture content of such reserves.
- (g) The average BTU rating of such reserves.
- (h) The nature of coal supply contracts required by utilities -- including both the length of the contracts and the annual coal requirements of such contracts.
- (i) Whether or not UEC is able to compete for said coal supply contracts or utilities.
- (j) The annual production capacity of UEC's present mines.
- (k) Present and future air pollution legislation.
- (l) Nuclear energy as an alternative energy source to coal.
- (m) Other alternative energy sources to coal.

Answer: The plaintiff does not know the answers to

Interrogatory 50(a)-(m) at this time.

#### Interrogatory 51

With respect to each utility presently purchasing coal produced in Illinois, state the amount(in tons) of uncommitted reserves which a coal producer must own or control and the total tons of coal which a coal producer must be able to produce annually in order to compete for the coal supply contracts of such utility.



**Answer:** The plaintiff does not know the answer to this Interrogatory at this time.

**Interrogatory 54**

Identify each coal producer known to plaintiff to have, without merger or combination with another coal producer with underground mining experience, undertaken underground mining operations within the last 40 years despite the fact that, prior thereto, such coal producer had not engaged in underground mining operations, and for each such producer, state:

- (a) The date of undertaking such underground mining operations.
- (b) The location of such underground mining operations.

**Answer:** The plaintiff does not know the answer to this Interrogatory at this time.

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION

UNITED STATES OF AMERICA, )

Plaintiff, )

v. )

GENERAL DYNAMICS CORPORATION; )  
THE UNITED ELECTRIC COAL )  
COMPANIES; and FREEMAN COAL )  
MINING CORPORATION, )

Defendants. )

CIVIL ACTION

NO. 67 C 1632

**PLAINTIFF'S AMENDED ANSWERS TO  
INTERROGATORIES OF THE DEFENDANTS**

**Interrogatory 20**

With reference to Paragraph 20 of the Complaint, state the date after which plaintiff contends UEC and Freeman were no longer "direct and substantial competitors in the sale of bituminous coal" and state the facts and identify the data upon which plaintiff relies in supporting its contention.

**Answer:** In addition to the plaintiff's answer to Interrogatory 20 as set forth in the Answers to Interrogatories of the Defendants, which was served and filed on March 15, 1968, the plaintiff states that Freeman Coal Mining Corporation ("Freeman") and The United Electric Coal Companies ("UEC"), if separately owned, would be actual and potential competitors based on the following facts:

- (1) Each produces bituminous coal in the same geographic areas;
- (2) Each advertises its coal for sale to the same type of customers, which customers are located in the same geographic areas in which Freeman and UEC produce and sell coal;
- (3) Each negotiates and bids for some of the same sales of coal;
- (4) Each sells to industrial and to utility customers which are located in the same geographic areas;
- (5) Each sells its coal to many of the same customers;
- (6) Each uses many of the same shipping routes for the shipment of the coal it produces and sells.

The data in support of the foregoing statements are as follows:

- (1) Keystone Coal Buyers Manual 1967 (McGraw-Hill, Inc., New York, N.Y.) has, at page 417, a full page advertisement of UEC, a copy of which is attached. This advertisement states, in part, that "UNITED ELECTRIC COALS for ELECTRIC UTILITIES and BASIC INDUSTRIES" are available "BY BARGE on the Inland Waterways,"

"BY LAKE VESSEL to Great Lakes Ports," "BY RAIL to all Middle West Points" and "BY TRUCK for Local Area Delivery."

- (2) Keystone Coal Buyers Manual 1967 has, at page 423, a full page advertisement of Freeman, a copy of which is attached. This advertisement states, in part, that Freeman Coal is "distinguished for their basic character and excellent preparation for electric utility, industrial, metallurgical and heating uses."
- (3) Keystone Coal Buyers Manual 1967 has, at page <sup>49</sup>~~57~~, a full page advertisement of Freeman, a copy of which is attached. This advertisement states, in part, that "For generating electricity . . . There's a Freeman coal that's exactly right for the job."
- (4) The above three advertisements in the Keystone Coal Buyers Manual 1967 are also set out in the Keystone Coal Buyers Manual 1966 at pages 439, 431, and 67.
- (5) Keystone Coal Buyers Manual 1967, at pages 418 and 420. These pages show, inter alia, that the Fidelity Mine of UEC ships coal on the Illinois Central and on the Missouri Pacific Railroads, while the Orient No. 3 Mine

of Freeman ships coal on Missouri Pacific, Illinois Central and Chicago Burlington & Quincy Railroads.

We note that the shipping point for the Fidelity Mine is Pinckneyville, Illinois, while the shipping point for the Orient No. 3 Mine is the Mine. The Illinois State Geological Survey map entitled "SHIPPING COAL MINES IN ILLINOIS," which is dated January 1, 1966, shows that the Orient No. 3 Mine is less than one mile from the Missouri Pacific rail line and that at this point the Orient No. 3 Mine is about 20 miles from Pinckneyville, the shipping point for UEC's Fidelity Mine on the same rail line of the Missouri Pacific.

Keystone Coal Buyers Manual 1967 also shows, at page 418, that Freeman's Orient No. 4 Mine and Orient No. 5 Mine also ship on, among others, the Missouri Pacific and the Illinois Central Railroads.

- (6) Letter from Illinois Power Company dated October 17, 1966. This letter has an attachment showing, among other things, that in 1964 Freeman and UEC both supplied coal (and, hopefully, in competition) to the Illinois Power Co. plants located in Vermilion and Wood River, and that in



1965 Freeman and UEC both supplied coal to the Illinois Power Co. plant at Vermilion. Furthermore, this letter from Illinois Power Co. states, in pertinent part, that:

Both United Electric Coal Companies and Freeman Coal Mining Corporation have bid on supplying coal to our company. Other area coal suppliers also having bid for these requirements has satisfied us that the two named companies you have questioned have in fact held themselves out to be competitors.

- (7) A Dun & Bradstreet "Analytical Report" on UEC dated June 8, 1966 states, at page 6, that UEC's sales "are made through the company's own sales organization largely to the utilities and heavy industries" and that UEC's "territory" is "Chicago, St. Louis and other industrial sections within easy shipping distance of the mines" and that "sales offices are maintained at St. Louis, Missouri and Peoria, Illinois, [and] also various other sales offices and distribution or service points [are maintained] at other locations."

A Dun & Bradstreet "Analytical Report" on Freeman dated November 11, 1966, states that Freeman's territory

is "largely the middle western states" and that Freeman's "sales offices are maintained in St. Louis, Missouri and Springfield, Illinois."

Freeman and UEC also both maintained separate sales offices in Chicago, Illinois.

- (8) Letter from Central Illinois Public Service Company dated October 28, 1966. This letter states, inter alia, that:

For many years it has been our practice to negotiate on an individual basis the terms of our coal purchases from our several coal suppliers. Several factors are considered in our coal purchasing decisions. Among these factors are: type of product (dust, screenings, carbon, etc.), BTU content, cost per million BTU (F.O.B. generating plant), sulfur and other impurities content, moisture content, amount of resulting ash, etc. Based upon the application of such factors, our coal purchases from Freeman Coal Mining Corporation and The United Electric Coal Companies have resulted in these two companies being among the principal suppliers of coal to two of our four electric generating stations (no coal is purchased from either company for use at our other two generating stations). In 1964 Freeman provided 24.8 percent and United Electric 2.9 percent of the total coal requirements at one of the generating stations, while at the other generating station the amounts were 12.3 percent and 23.8 percent, respectively. Similarly, in 1965 the relationships were 22.2 percent for Freeman and 3.0 percent for United Electric at the first station and 12.1 percent and 26.5 percent, respectively, for the second station. All factors considered, we have found the two companies to be competitive.

- (9) Both Freeman and UEC own a substantial portion of Rail-To-Water Transfer Corporation, a firm which is engaged in the transfer of coal from railroad cars to vessels transporting coal on Lake Michigan.

The gradual acquisition of all of UEC's stock by the owners of Freeman commencing in 1955 and completed about December of 1966, or shortly thereafter, eliminated both actual and potential competition between Freeman and UEC. Plaintiff does not know the date within the period of gradual acquisition of UEC stock when Freeman and UEC were no longer direct and substantial competitors in the sale of coal.

Interrogatory 21

With reference to Paragraph 20 of the Complaint, does plaintiff contend that all of the approximately 53% of Freeman's dollar sales and the approximately 61% of UEC's dollar sales which are alleged to have been to the same customers in 1965 were sales that were made, or could have been made, in competition with each other?

- (a) If plaintiff does not so contend, identify, by name and location of customer, location of receiving plants and tonnage involved, which of such sales were made, or could have been made, in competition with each other.
- (b) If plaintiff does not so contend, identify, by name and location of customer, location of receiving plants and tonnage involved, which of such sales were not made, or could not have been made, in competition with each other.

- (c) State the facts and identify the data upon which plaintiff relies in supporting its answers to Interrogatory 21, and, if answered, Interrogatories 21(a) and 21(b).

Answer: Plaintiff contends that Freeman and UEC, if separately owned in 1965, could have competed with each other in substantial sales to the same customers. Plaintiff does not know of any specific sales to any specific customers which were made in 1965 which could not have been made by Freeman and UEC in competition with each other.

BY BARGE



on the Inland Waterways

BY LAKE VESSEL



to Great Lakes Ports

BY RAIL



to all Middle West Points

BY TRUCK



for Local Area Delivery

## UNITED ELECTRIC COALS for ELECTRIC UTILITIES and BASIC INDUSTRIES

**BANNER** - Direct Barge-Loading Coal Mine.  
Premium quality heavy media washed coal.  
Banner Seam, Peoria County, Illinois

**CUBA-BUCKHEART**  
Heavy media, washed and heat dried coals.  
Fulton County, Illinois, No. 5 Seam.

**FIDELITY**  
Washed and heat dried coals.  
Perry County, Illinois, No. 6 Seam.

**THE UNITED ELECTRIC COAL COMPANIES**

A SUBSIDIARY OF GENERAL DYNAMICS CORPORATION / 300 N. Michigan Ave. • Chicago, Ill. 60611 • United 5-6100



## Deep Mined Coals from No. 6 Seam in Southern and Central Illinois

distinguished for their basic character and  
excellent preparation for electric utility, industrial,  
metallurgical and heating uses



### ORIENT NO. 3 JEFFERSON COUNTY, SOUTHERN ILLINOIS



Shipping point Orient Mine, No. 3, Illinois. Daily capacity 14,000 tons. One of the largest mines in the country. Famed for quality and excellence of preparation. The lowest ash low sulphur coal in Illinois for metallurgical, electric utility, industrial and heating applications. Extensive reserves.

### ORIENT NO. 4 WILLIAMSON COUNTY, SOUTHERN ILLINOIS



Shipping point Orient Mine No. 4, Illinois. Daily capacity 7,000 tons. A special feature of this mine is its attractive glossy-black, firm structure coal, unusually low in moisture and high in Btu content. A popular dealer coal as well as a long-time favorite with utilities and industries.

### ORIENT NO. 5 FRANKLIN COUNTY, SOUTHERN ILLINOIS



Shipping point West Frankfort, Illinois. Daily capacity 7,000 tons. Freeman's newest mine, highly automated for unusually precise control of both quality and sizing. Orient No. 5 coal is a low moisture, high Btu product, highly desirable for utility, industrial and heating uses.

### CROWN MINE MONTGOMERY COUNTY, CENTRAL ILLINOIS



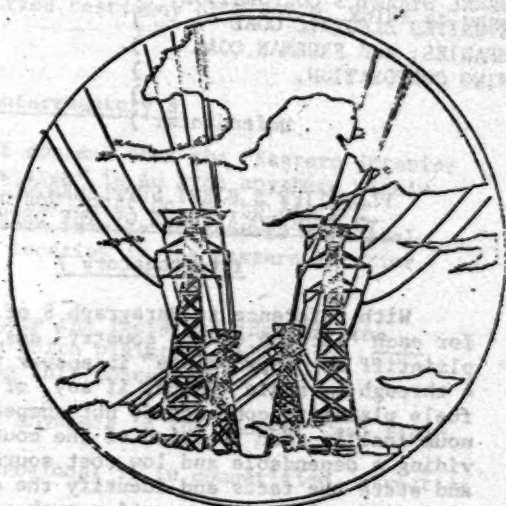
Shipping point Crown, Illinois. Daily capacity 10,000 tons. The largest air-cleaning plant in the country plus unusually versatile preparation facilities capable of meeting varied market requirements. Crown coal is widely used by utilities and industries, and also has a large and loyal dealer following.

Distributors of Choice High and Low Volatile Coals from Eastern Kentucky and West Virginia

## FREEMAN COAL MINING CORPORATION

A DIVISION OF GENERAL DYNAMICS CORPORATION / 387 N. Michigan Ave. • Chicago, Ill. 60611 • ANSLOW 3-3100

KEYSTONE COAL BUYERS MANUAL



If you are generating electricity, or doing any industrial power or heating job with coal, use a product of the Freeman mines in Illinois . . . for quality and consistently

excellent performance. Available reserves aggregate one billion tons. You can be sure of dependable service and security of supply today and for many years to come.

## **FREEMAN COAL MINING CORPORATION**

A DIVISION OF GENERAL DYNAMICS CORPORATION / 327 N. Michigan Ave. • Chicago, IL 60601 • ARCover 3-3222

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION

UNITED STATES OF AMERICA,

Plaintiff,

v.

GENERAL DYNAMICS CORPORATION;  
THE UNITED ELECTRIC COAL  
COMPANIES; and FREEMAN COAL  
MINING CORPORATION,

Defendants.

CIVIL ACTION

NO. 67 C 1632

PLAINTIFF'S FIRST SUPPLEMENTAL ANSWERS  
TO INTERROGATORIES OF THE DEFENDANTS

Interrogatory 7

With reference to Paragraph 8 of the Complaint, for each "section of the country" designated by plaintiff as "appropriate" in answer to Interrogatories 4 through 6, state which, if any, of the following fuels plaintiff contends do not compete with bituminous coal in such "section of the country" in "providing a dependable and low cost source of energy," and state the facts and identify the data upon which plaintiff relies in supporting such contention:

- (a) Gas
- (b) Oil
- (c) Nuclear energy
- (d) Lignite
- (e) Water

Answer: None of the above fuels compete substantially with bituminous coal in the sections of the country which are appropriate to this lawsuit as set out in the answers to Interrogatories 4-6. In answer to this Interrogatory plaintiff relies on Kurtz

deposition exhibits 1-8, 9 (at pages 86-90) and 10 (at pages 73-77) and the following deposition testimony together with the exhibits marked therein: deposition testimony of Thomas J. Tarzy at pages 16-18, 315-317, 319, 320-327; <sup>Exhibit deposition exhibits Nos. 1-8 (Tables 1-3), 9 and 10;</sup> deposition testimony of Joseph J. Gallagher (no transcript pages available); deposition testimony of Nicholas J. Camicia at pages 100-102; deposition testimony of John M. Morris at pages 297-299 (and Morris deposition exhibit 70); and deposition testimony of Frank F. Kolbe at page 85 and pages 164-166.

#### Interrogatory 8

Does plaintiff contend that the "Eastern Interior Coal Province sales area" is an area anywhere within which coal mined at any location in the Eastern Interior Coal Province is able to compete with coal mined at any other location in the Eastern Interior Coal Province?

- (a) If so, state the facts and identify the data upon which plaintiff relies in supporting this contention.

Answer: Coal mined anywhere in the Midwest Coal Field (Eastern Interior Coal Province) is in competition, direct or indirect, with all other coal mined in said area, for sales in the Eastern Interior Coal Province sales area as defined in the Complaint. The answers to Interrogatories 3(c) and 19 are herein fully incorporated. In further support of this answer the

Government relies on the deposition testimony of Charles W. Stadell at pages 35-36 of December 16, 1968 (no transcript pages available) and the deposition testimony of Nicholas J. Camicia at pages 77-78 and pages 107-133.

### Interrogatory 13

Identify the twenty largest (in terms of total tons produced from mines within Illinois) coal producers operating mines within the State of Illinois in 1967 and, for each, state total nationwide production, production from mines within the Eastern Interior Coal Province, and production from mines within the State of Illinois, all for the year 1967.



Answer:

<u>Name</u>	<u>Nationwide Production</u>	<u>Eastern Int.<sup>1/</sup> Coal Province Production</u>	<u>State of Illinois <sup>2/</sup> Production</u>
1. Peabody Coal Co. (including Midland Electric Coal Corp., Forsythe Energy Coal Co. and Stonefort Coal Mining Co., Inc.)	NA	42,546,199	20,158,284 <sup>3/</sup>
2. Freeman Coal Mining Corp. (Subsidiary of General Dynamics)	NA	8,380,496	8,380,496
3. Southwestern Illinois Coal Corp.	NA	7,526,586	7,526,586
4. Truax-Traer Coal Co. (Subsidiary of Consoli- dated Coal Co.)	NA	6,906,344	6,906,346 <sup>4/</sup>
5. Old Ben Coal Corp.	NA	9,457,647	5,989,539
6. The United Electric Coal Companies	NA	5,743,098	5,743,291 <sup>5/</sup>

<sup>1/</sup> Source: "Report of Mine Performance . . . January through December 1966 and 1967 for Illinois, Indiana, and West Kentucky, by Districts" published by Mid-West Coal Producers Institute, Inc. (Terleke deposition exhibit 11).

<sup>2/</sup> Source: Coal Report of Illinois, 1967, Department of Mines and Minerals, State of Illinois, Table 10 (Kolbe deposition exhibit 19).

<sup>3/</sup> Mid-West Institute figure is 15,832 tons more.

<sup>4/</sup> Mid-West Institute figure is 2 tons less.

<sup>5/</sup> Mid-West Institute figure is 193 tons less.

<u>Name</u>	<u>Nationwide Production</u>	<u>Eastern Inc. <sup>1/</sup> Coal Province Production</u>	<u>State of Illinois <sup>2/</sup> Production</u>
7. Zeigler Coal & Coke Co. (including subsidiaries)	NA	3,940,921	2,898,399 <sup>6/</sup>
8. Sahara Coal Co., Inc.	NA	2,823,526	2,550,307 <sup>7/</sup>
9. Ayrshire Collieries Corp.	NA	8,604,021	2,367,983
10. Main Line Coal Corp.	NA	NA	587,784
11. Little Dog Coal Co.	NA	NA	416,049
12. Blue Bird Coal Co.	NA	NA	182,970
13. Ajax Coal Co., Inc.	NA	NA	158,324
14. Tab Mining Co., Inc.	NA	NA	135,536
15. Sherwood-Templeton Coal Companies (Pioneer)	NA	117,507	117,735 <sup>8/</sup>
16. Barbara Kay Coal Co., Inc.	NA	NA	111,741
17. Belle Valley Coal Co., Inc.	NA	NA	107,090
18. Jo Lon Mining Co.	NA	NA	88,371
19. Harrisburg Coal Co.	NA	NA	75,589
20. Parton Coal Co.	NA	NA	65,545

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<sup>6/</sup> Mid-West Institute figure is 1 ton more.

<sup>7/</sup> Mid-West Institute figure is 273,019 tons more.

<sup>8/</sup> Mid-West Institute figure is 228 tons less.

Interrogatory 14

With reference to Paragraph 19 of the Complaint, identify all coal producers referred to in the answers to Interrogatories 9 through 13, which plaintiff contends are "leading" producers and state the facts upon which plaintiff relies in supporting each such contention.

Answer: The answer to Interrogatory 13 is herein fully incorporated. In support of this contention the plaintiff relies on its answers to Interrogatories 3(c), 8 and 19.

Interrogatory 15

With reference to Paragraph 19 of the Complaint, identify all coal producers referred to in the answers to Interrogatories 9 through 13, which plaintiff contends are not "leading" producers and state the facts upon which plaintiff relies in supporting each such contention.

Answer: The only producers which plaintiff contends are not leading producers as set out at answers to Interrogatories 9 through 13 are those which are no longer producing coal. The plaintiff herein fully incorporates its answer to Interrogatory

Interrogatory 20

With reference to Paragraph 20 of the Complaint, state the date after which plaintiff contends UEC and Freeman were no longer "direct and substantial competitors in the sale of bituminous coal" and state the facts and identify the data upon which plaintiff relies in supporting its contention.

Answer: The plaintiff does not know the answer to this Interrogatory. Competition between UEC and Freeman gradually lessened as General Dynamics increased its stock ownership in UEC.

Interrogatory 21

With reference to Paragraph 20 of the Complaint, does plaintiff contend that all of the approximately 53% of Freeman's dollar sales and the approximately 61% of UEC's dollar sales which are alleged to have been to the same customers in 1965 were sales that were made, or could have been made, in competition with each other?

- (a) If plaintiff does not so contend, identify, by name and location of customer, location of receiving plants and tonnage involved, which of such sales were made, or could have been made, in competition with each other.
- (b) If plaintiff does not so contend, identify, by name and location of customer, location of receiving plants and tonnage involved, which of such sales were not made, or could not have been made, in competition with each other.
- (c) State the facts and identify the data upon which plaintiff relies in supporting its answers to Interrogatory 21, and, if answered, Interrogatories 21(a) and 21(b).

Answer: The plaintiff does contend that all of the sales of Freeman and all of the sales of UEC in 1965 could have been made in competition with each other, with the exception of Freeman's sales of metallurgical coal. In support of this fact, the plaintiff relies on the testimony of the United Electric's present and former officers as set out in our answer to Interrogatory 19. The plaintiff also points out that Frank Nugent testified that

(at page 361):

A The competitors of the Freeman Coal Mining Corporation on southern Illinois coal are those producers in southern Illinois, western Kentucky and Indiana, and to a degree producers in the Belleville District.

Competitors of Freeman in central Illinois are producers in central Illinois and Fulton County, and to a limited extent coals from other fields that can reach Edison's market.

Furthermore, Frank F. Kolbe testified that UEC and Freeman were competitors (at pages 164-166).

Charles W. Stadell also testified on December 16, 1968, that coal mined in all of the freight rate districts in Mining Districts 9, 10 and 11 have shipped and could ship coal into the Chicago metropolitan area, <sup>at pages 35-36.</sup> (transcript reference page not available).

See also Morris deposition testimony, at pages 299-304. See also answers to Interrogatories 19-20, 22-24.

#### Interrogatory 27

With reference to Paragraph 23(c) of the Complaint, does plaintiff contend that the challenged acquisitions of UEC stock may increase concentration in the production and sale of bituminous coal beyond the increase in concentration, if any, which would occur if UEC and Freeman were one company? If so, state the facts and identify the data upon which plaintiff relies in supporting such contention.

Answer: It may be inferred that if the Freeman-UEC combination is not dissolved, other such illegal mergers may be attempted.

Interrogatory 44

Does plaintiff contend that UEC can, at the present time, purchase additional coal reserves (other than abutting or fill-in acreage) recoverable through strip mining operations within those reserves identified in response to Interrogatory 42? If so, state their location by County and State and, for each field of reserves by County, state:

- (a) Their exact location.
- (b) The coal seam or seams involved and the amount (in tons) recoverable from each seam.
- (c) The average overburden covering such reserves.
- (d) The average seam thickness of such reserves.
- (e) The average overburden to seam thickness ratio of such reserves.
- (f) The average sulphur content (in percent) of such reserves.
- (g) The average ash content (in percent) of such reserves.
- (h) The average moisture content (in percent) of such reserves.
- (i) The average BTU rating of such reserves.
- (j) The party or parties from whom they can be acquired.
- (k) The approximate cost (in dollars) of acquisition.
- (l) Which, if any, present or potential customers of UEC could be served by such reserves.



- (m) Which, if any, present or potential customers of Freeman could be served by such reserves.

Answer: Yes. The location of these coal reserves are as follows:

1. Augusta Field, located approximately ten miles west of the Industry Field, contains approximately 10 million tons of coal. Source: Inman deposition pages 53, 55 and 161.
2. Meredosia - Mount Sterling area, located in Brown County, Illinois, contains 30 million tons between 100 and 150 feet of overburden and five million tons beneath less than 100 feet of overburden. Source: Inman deposition pages 59-60.
3. Tazewell County, Spring Lake Township area, located directly south of the Banner Mine across the Illinois River, contains 5,000,000 tons of coal. Source: Inman deposition pages 60, 61 and 161.
4. Salt Fork Field, located near Catlin, Illinois, four miles from the Mary Moore Mine, contains 35,000,000 tons beneath overburden ranging from 60 to 150 feet and 150 feet to 200 feet deep. Source: Inman deposition pages 63-70.
5. Fidelity Mine contains 5,000,000 tons of coal classified as deep coal but which possibly may be stripped. The coal is six

feet thick and is beneath overburden ranging from 80 feet to 125 feet deep. Source: Inman deposition pages 112, 114 and 115.

6. Industry Field contains an additional one to two million tons which UEC could acquire. Source: Inman deposition page 162.

7. There may be additional reserves at UEC's present mines which reserves are unknown to UEC at the present time. For example, Mary Moore was operated longer than anticipated. Source: Inman deposition page 72 (substantiated by the deposition testimony of John M. Morris at pages 38-58 and Frank F. Kolbe at pages 230-231).

8. Due south of the Industry Field, toward the town of Bushville, Illinois, there are coal reserves. Source: Inman deposition page 186.

In addition to the foregoing, plaintiff contends that there is a probability UEC may be able to acquire additional coal reserves (other than those abutting present reserves and "fill-in" acreage) recoverable through strip mining operations. In support of this contention, and of areas 1 through 8 above, the plaintiff also relies on the deposition testimony of Burl Jensen at the following pages (together with the exhibits identified and/or discussed therein): 118-137, 171-178, 183-215, 216-226, 258-268 and 271 and the deposition testimony of Thomas H. Latimer at the

following pages (together with the exhibits identified and/or discussed therein): 71-82, 84-87, 92-96, 412-413, 101-106, 108-117, 129-133, 137-140, 140-141, 141-147, 147-153, 153-155, 159-167, 178-186, 190-193, 223-295, 205-213, 295-310, 311-319, 319-326, 326-328, 324-350, 354-356, 366-369, 350-354, 358-366, 370-373, 373-375. In further support of the above see Morris deposition exhibit 12.

#### Interrogatory 46

Does plaintiff contend that UEC can mine its Industry Field strip reserves in Illinois and competitively market the coal produced? If so, state:

- (a) The approximate time by which such mining could be undertaken.
- (b) Which, if any, present or potential customers of UEC could be served by such coal.
- (c) Which, if any, present or potential customers of Freeman could be served by such coal.

Answer: The plaintiff contends that the Industry Field can be mined at a profit by a competent and unfettered management. The plaintiff does not know at what time this could take place but Robert H. Inman, former Vice President - Operations of UEC, testified that the Industry Field possibly may be mined after the Fulton County reserves of United Electric are exhausted.

Source: Inman deposition at page 162.

In further support of the profitable minability of the Industry Field the plaintiff relies on the deposition testimony of Frank F. Kolbe, former President of UEC and Chairman of the UEC Board of Directors at pages 208-230, 253-259, 268-271, 772-800, 807-813, 813-818.

In further support of the profitable minability of the Industry Field the plaintiff relies on the deposition testimony of John M. Morris, the former President of UEC, at pages 144-187 (and Morris deposition exhibits 21-31) and the testimony of Thomas J. Latimer, Land Manager of UEC, at pages 427-428, 354-356, 366-369 and 459-462 (and Latimer deposition exhibit 47).

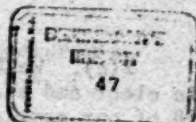
#### Interrogatory 54

Identify each coal producer known to plaintiff to have, without merger or combination with another coal producer with underground mining experience, undertaken underground mining operations within the last 40 years despite the fact that, prior thereto, such coal producer had not engaged in underground mining operations, and for each such producer, state:

- (a) The date of undertaking such underground mining operations.
- (b) The location of such underground mining operations.

Answer: The plaintiff believes that Ayrshire Collieries Corp., Indianapolis, Indiana, is at least one strip coal producer which has undertaken underground mining without merger or combination with another coal producer. This mine is known as the Thunderbird Mine and it is located in the Linton Freight Rate District in Indiana. See deposition testimony of Frank F. Kolbe at pages 139-140 and Terleke deposition exhibit 11.

DEPARTMENT OF JUSTICE  
Room 2636 United States Courthouse  
Chicago, Illinois 60604



60-0-37-920 May 29, 1969

Reuben L. Hedlund, Esq.  
Kirkland, Ellis, Hodson,  
Chaffetz & Masters  
Prudential Plaza  
Chicago, Illinois 60601

Re: United States v. General Dynamics  
Corporation et al., Civil Action  
No. 67 C 1632 (N.D. Illinois)

Dear Mr. Hedlund:

This letter is in reply to your letter to us of January 24, 1969, reporting on our conference of January 17, 1969 when we discussed plaintiff's answers to the defendants' interrogatories. The numbering below corresponds to the numbering of the defendants' interrogatories. We have considered your questions and requests and the following are our comments and responses:

1(l). The "industrial customers" of Freeman referred to in paragraph 14 of the complaint was based on computations made from the statement setting forth the names and addresses of the twenty-five largest customers of Freeman for the year 1965, together with the total dollar amounts and tonnages of coal sold to each of these customers during 1965, which material was sent to us by Benjamin Z. Gould, Esq., then counsel for General Dynamics, by letter dated November 11, 1966.

1(n). Our answer to this interrogatory is revised to substitute the word "means" for the words "refers to the fact."

1(q). We believe that our answer to this interrogatory is clear and adequate.

2(b). This phrase is, we believe, clear and adequate and refers to the allegation in paragraph 16 of our complaint that in 1955 the combination of GD and UEC ranked as the second largest seller of bituminous coal in Illinois regardless of the States in which coal sold in Illinois was mined by any seller.



2(c). We believe that our answer to this interrogatory is clear and adequate and refers to the allegation in paragraph 18 of our complaint that in 1955 the combination of GD and USC ranked as the second largest seller of bituminous coal in the Eastern Interior Coal Province sales area regardless of the States in which coal sold in such area was mined by any seller.

3(c). In essence, D. W. Euchenan, Jr., Charles W. Stedell, Elmer C. Hill, Warren F. Wurzburg, Harry Eggert and the unidentified geologist from Paul Weir & Company stated that the Eastern Interior Coal Province sales area is recognized in the industry as the principal area where Eastern Interior Coal Province coal is sold.

3(f). We believe that the allegation in paragraph 9 of our complaint that "the United States now has between 830 billion and 2,000 billion tons of coal reserves which can be recovered" is a "conservative allegation," as stated in our answer to this interrogatory, because it refers to coal reserves now known or estimated by the U.S. Geological Survey and does not refer to coal reserves which have not become known or have been estimated.

3(k). We believe that this answer is correct. We estimated the 1967 Illinois coal production and obtained the coal production in Illinois from 1950 through and including 1966 from various editions of the Illinois Coal Report.

3(l). We do not know the data upon which Jack A. Simon relied in making the statements set forth in this answer. However, we note that Gallagher deposition exhibit 1, which is the Bureau of Mines report entitled "Bituminous Coal and Lignite Distribution Calendar Year 1965" states, at page 8, that in 1955 34,147,000 tons of the coal shipped to Illinois consumers were produced in Illinois and that total shipments to Illinois consumers amounted to 44,356,000 tons of coal.

3(r). In essence, Jack A. Simon told us that many mergers had occurred in the Midwest coal industry and that there are less companies operating in Illinois than formerly.



7. We believe that our answer to this interrogatory is clear and adequate and the word "substantially" is not deleted.

8(a). Our answer to this interrogatory is revised to substitute the words "actually or potentially" for the words "direct or indirect" and to add the word yes to the beginning of our answer.

14 & 15. The word "leading" used twice in paragraph 19 of our complaint is meant to be synonymous with the word "largest." The largest producers as referred to in this paragraph are set out in our answers to Interrogatory 13.

16. The information obtained by us from Southwestern Illinois Coal Corp. and Peabody and affiliates does not provide the information requested by Interrogatory 16. Southwestern's and Peabody's executives have requested that we not disclose this reserve information to defendants because to do so would create competitive harm.

19. The words "same customers" referred to in paragraph 20 of our complaint means a common customer and does not refer specifically to a facility or facilities of a customer.

20. Our position is that Freeman and UEC can no longer be actual or potential competitors because they are both owned by the same corporation, that is, by General Dynamics. They were substantial competitors when owned separately.

22(a). Our answer to this interrogatory is revised to substitute the words "and, probably, in various submarkets thereof" for the words "and in various other sections of the country."

22(b)-(e). We believe that our answers to these interrogatories are clear and adequate. The words "same customers" referred to in paragraph 20 of our complaint does not refer specifically to a facility or facilities of a customer.

24 & 25. We believe that our answers to these interrogatories are clear and adequate.

27. We believe that our answer to this interrogatory is clear and adequate.

28 & 29. Other than the allegations alleged in subparagraphs 23(a) through 23(c) of the complaint, General Dynamics' acquisition of URC has been anticompetitive due to actual and potential reciprocity activities of the defendants. However, we will not adduce evidence on this subject at trial nor make it an issue in this case. In reference to vertical anticompetitive effects we await your answer to numbered paragraph 16 of our letter to you of May 23, 1969.

35, 38 & 39. We believe that our answers to these interrogatories are clear and adequate.

42 & 43. Western reserves are relevant only to the relief issues of this lawsuit.

46. We believe that our answers to this interrogatory are clear and adequate.

47. Our answer to this interrogatory is revised to include after the words "Freeman's Orient Mines" the words "and any Illinois and any Eastern Interior Coal Province sales area customers."

48. We believe that our answer to this interrogatory is clear and adequate.

This letter, and not your letter of January 24, 1969, contains our revisions to your interrogatories.

Sincerely yours,

RICHARD W. McLAREN  
Assistant Attorney General

By

  
John T. Cusack

Attorney, Midwest Office  
Antitrust Division

## DEFENDANT'S EXHIBIT 48

## EXHIBIT "A"

CHICAGO, WILMINGTON &  
FRANKLIN COAL COMPANY

Chicago, Illinois

December 15, 1954

*To the Stockholders of*

## CHICAGO, WILMINGTON &amp; FRANKLIN COAL COMPANY:

The coal mining industry has run into a series of evolutionary changes which have caused a shrinkage in demand for its product and have brought severely competitive conditions. Dieselization of the railroads, great expansion of natural gas distribution, and recent unrestricted imports of foreign residual oil which undersells coal may be mentioned. While some economic students believe that it will not be many years before coal will again have to greatly increase its output, to meet metallurgical, electrical and other expanding needs, the consensus is that our industry currently is undergoing great changes and may have several more years of difficult adjustment.

Naturally our Company has studied possible ways of improving its position. We have been invited into several tentative proposals of consolidation, but in each case the net result to our stockholders would be largely that of an exchange of their stock in our company for some other coal mining security, with no guarantee of much, if any, improvement of the character of their investment. If, on the other hand, an opportunity should present itself to sell our stock outright, at a satisfactory price for cash, that might be something of great interest.

It happens that such a suggestion was made to me earlier this year which I have worked on and developed to a point where I could discuss it with our Board of Directors. Understandably, the other party to these discussions has not yet wished to be disclosed.

I have been able to work out tentatively a quite definite proposition and have our Board's approval to present it to you and add my personal endorsement.

A price of \$25.00 per share is considered to be fair and mutually satisfactory for C.W.F. stock for such a trade as I have indicated. The tentative purchaser has expressed a desire to have the undersigned, and also several of our key men, available for a period. It is my belief that this wish has added considerably to the purchaser's willingness to buy. I do not expect that any compensation I may receive for future services will be more than I would reasonably expect to receive if no sale is made, and C.W.&F. continues to operate. It is distinctly understood that I am not to receive now or to be promised any re-investment opportunity for the proceeds of any of my family stock, all of which is to be sold at \$25.00 per share under the plan. I will not make any profit or commission on the Options and Proxies running to me.

In our talks on this matter we have insisted upon an equal price and treatment for every participating stockholder, more specifically a price of \$25.00 per share. And of course we have also required assurances that our employe personnel will be given a fair and sympathetic opportunity for continued employment.

It is to be emphasized that the trade is contingent upon prompt participation by at least 76% of the outstanding shares, and is also contingent upon an inspection of property and a verification of balance sheet items, which it is believed can be accomplished expeditiously and in time to permit deposit in the bank of the \$25.00 per share by December 31, 1954 for all shares that are deposited with the bank without delay.

I have been the head of our Company for forty years and a very large percentage of our stock is owned by my personal friends, or their widows or heirs. My own family and the Webster family are the largest ownership blocks and, with the stock owned by Stonega and a few other similar holdings, constitute a majority of our shares. It seems to me that the character of such a large part of the ownership of our Company, together with the possible opportunity to receive a satisfactory cash

price, indicates the wisdom of accepting this chance to be taken out of what may be called a "business man's investment" in coal mining.

In order to assist in carrying out this transaction, an Option and Proxy running to me and a Transmittal Letter covering stock running to The First National Bank of Chicago as escrowee were prepared. Copies are being sent to you herewith. These documents expire January 20, 1955, if not exercised on or before that date. It has been possible for me to speak with a considerable number of my friends who have assured me of their approval. In order to pursue the opportunities I needed the definite agreement of a substantial majority of our stockholders. I proceeded accordingly and I now have the Options and Proxies of the owners of such substantial majority. I am now able to send this advice to all of our stockholders.

I sincerely hope that you will accept this opportunity and act promptly. If anything is not pleasantly understandable, I will consider it a privilege to answer questions, either in person or by phone. If these proposed transactions do not come to pass, we will go ahead, confidently, "as was".

In closing I think I should give you the following interim advice on the Company's business status:

Referring to my last letter to Stockholders, in our Annual Report for 1953 dated April 28th of this year:

The first quarter of 1954 showed improvement and the Company went into the early summer with a carefully worked out operating program that gave promise of continued betterment over last year. We had reduced the working force and daily output of Orient No. 1 to about 3500, from 5000 tons, making an important per ton saving in costs by concentrating production in a small remaining section with good mining conditions. This was to be and is the last year for No. 1. We had closed down Orient No. 2 for March and April, but had thought it wise to announce re-opening for May 2nd, for by which time our contracts for Orient coal and sales outlook indicated the need for this production additional to new No. 3 and reduced No. 1. However, we ran into



bad luck on several of our largest summer customers who were closed down or were forced to severely curtail planned coal consumption, unexpectedly for painful periods, which loss of tonnage together with extremely hot weather, with many quite unusual 100 degree days in our territory, gave us a difficult summer. Having to operate the older mines on broken time was unavoidably costly.

An as yet unaudited but reliable comparison of the first 11 months of this year (November, 1954 partly estimated) with those of last shows:

1st 11 months	1954	1953
Tons sold	3,011,775	3,028,735
Gross Coal Sales	\$12,318,941	\$13,227,713
Net Income	1,108,764	1,277,000
Depreciation & Depletion	499,418	353,497
Final Balance (after Federal Tax)	609,346	923,503

We now estimate that net results for 1954 probably will be about \$2.00 per share.

For your further information please see the following comparative condensed balance sheets at October 31, 1954 and at December 31, 1953, in accordance with the books of the Company. The statement at October 31, 1954 is subject to possible year-end and audit adjustments; however, I believe that it is substantially correct.

I also refer you to our annual report for 1953 with auditors' more complete balance sheet and notes. I will be pleased to send any of this data on request. As stated I will consider it a privilege to answer questions by phone or in person.

In closing, let me state that I wholeheartedly endorse this proposal for my own and my family holdings. Likewise, officers and employees of the Company, with a considerable ownership, also favor the proposed transactions. As I have stated earlier, a majority of the stockholders have already evidenced their approval by depositing their



stock with the bank. May I again emphasize that in order to take advantage of this opportunity you should act promptly by signing and returning the Option and Proxy to me and sending your stock to the bank.

**GEORGE B. HARRINGTON,**  
*President.*

### ASSETS

	Oct. 31, 1954	Dec. 31, 1953
Current Assets	\$ 3,102,551	\$ 3,423,589
Investments	50,713	50,712
Fixed Assets (less Reserves for Depr. & Depl.)	17,915,475	17,405,490
Other Assets	13,506	47,982
	<u>\$21,082,245</u>	<u>\$20,927,773</u>

### LIABILITIES

Current Liabilities	\$ 1,965,197	\$ 2,059,341
Long-Term Debt	2,727,900	2,558,975
Reserve for Workmen's Compensation	223,258	200,726
Reserves Other	180,865	100,000
Liability under Real Estate Sales Contracts	10,000	10,000
Capital Stock—No. Par Value: (346,702 shares outstanding)	4,541,108	4,541,108
Capital Surplus	4,832,785	4,832,785
Earned Surplus	6,601,132	6,624,838
	<u>\$21,082,245</u>	<u>\$20,927,773</u>

ABBREVIATION KEY AND EXPLANATION SHEETS FOR  
DEFENDANTS' EXHIBIT NO.s 49-52

DX 49A

SUBPOENA QUESTIONNAIRE FORMS AND RELATED  
COURT ORDERS

PRODUCER & MINE

ABBREVIATION KEY

-----Abbreviation-----		-----Explanation-----	
<u>Coal Co.</u>	<u>Mine</u>	<u>Coal Co.</u>	<u>Mine</u>
AYRS	CHNK	Ayrshire	Chinook
AYRS	DLTA	"	Delta
AYRS	HARM	"	Barmattan
AYRS	MINN	"	Minnehaha
AYRS	SUNS	"	Sun Spot
AYRS	THUN	"	Thunderbird
AYRS	WRIT	"	Wright
BRKY	BRDY	Barbara Kay	Barbara Kay
BBMN	EBNY	B B Mining	Ebony
BBMN	NO2	"	Number 2
BLVY	BLVY	Belle Valley	Belle Valley
BL&Z	MRDK	Bell & Zoller	Murdock
BL&Z	ZGL4	"	Ziegler #4
BL&Z	ZGL9	"	Ziegler #9
BL&Z	ORIL	"	Oriole
BL&Z	SPRT	"	Spartan
BKTM	BKTM	Black Tam	Black Tam
BRGE	BRGE	Burge	Burge
TXTR	BST2	Truax Traer	Burning Star #2
TXTR	BST3	"	Burning Star #3
TXTR	FIAT	"	Fiatt Red Ember
TXTR	HILS	"	Hillsboro
DRKS	BOON	Dark Star	Boone

<u>Coal Co.</u>	<u>Mine</u>	<u>Coal Co.</u>	<u>Mine</u>
DCLA	DCLA	Decola	Decola
GBRL	GBRL	Gibraltar	Gibraltar
GREN	PNHR	Green	Panther
HRBG	HRBG	Harrisburg	Harrisburg
HSTN	HSTN	Houston	Houston
ISCK	EDIA	Island Creek	E. Diamond
ISCK	FIES	"	Fies
ISCK	CRES	"	Crescent
ISCK	UNTN	"	Uniontown
ISCK	ATKN	"	Atkinson
ISCK	WILS	"	Williams
ISCK	PLSV	"	Pleasant View
JOLR	JOLR	Jolor	Jolor
KIRK	CANY	Kirkpatrick	Caney Creek
WRIT	WRIT	Wright	Wright
MORS	HRTN	Morris Bros.	Horton
OLDB	BLKF	Old Ben	Blackfoot
OLDB	ENOS	"	Enos
OLDB	KING	"	Kings
OLDB	NO21	"	No. 21
OLDB	NO24	"	No. 24
OLDB	NO9	"	No. 09
PRTN	PRTN	Parton	Parton
PEAB	EAGL	Peabody	Eagle
PEAB	EDWD	"	Edwards
PEAB	MECO	"	Mecco
PEAB	MWST	"	Midwest
PEAB	NRTH	"	Northern
PEAB	RKNG	"	River King
PEAB	WSCR	"	Will Scarlet
PEAB	DYMO	"	Dynamo Mine #10
PEAB	UTIL	"	Utility Hiwall

<u>Coal Co.</u>	<u>Mine</u>	<u>Coal Co.</u>	<u>Mine</u>
PEAB	ALND	Peabody	Allendale
PEAB	BSTR	"	Bright Star
PEAB	MDLG	"	Middlegrove
PEAB	ENGY	"	Forsyth-Energy
PEAB	HMST	"	Homestead
PEAB	KEN	"	Ken
PEAB	RVQN	"	River Queen
PEAB	RIVW	"	Riverview
PEAB	SNCL	"	Sinclair
PEAB	VOGE	"	Vogue
PEAB	CHFT	"	Chieftan
PEAB	HWTH	"	Hawthorn
PEAB	LYNV	"	Lynnville
PEAB	OLGL	"	Old Glory
PEAB	VICT	"	Victoria
PTMY	COLO	Pittsburg & Midway	Colonial
PTMY	DEK6	"	DeKoven #6
PTMY	DEK9	"	DeKoven #9
PTMY	PARA	"	Paradise
PYRO	PYRO	Pyro	Pyro
RS&K	NO1	RS&K	Number 1
RIAL	JIFF	Rialto	Jiffy
RUSB	LTLJ	R. Badgett	Little Joe
SAHA	5 16	Sahara	No. 5 and No. 16
SAHA	NO6	"	No. 6
SHTP	PION	Sherwood-Templeton	Pioneer
SWIL	CAPT	Southwest Ill.	Captain
SWIL	STRL	"	Streamline
TABB	LKVN	Tab-Badgett	Lakeview
VDAY	VDAY	V-Day	V-Day
VEND	VEND	Venedy	Venedy
WEBT	DOTI	Webster County	Dotiki

<u>Coal Co.</u>	<u>Mine</u>	<u>Coal Co.</u>	<u>Mine</u>
WICR	SHRK	Weirs Creek	Shamrock
FREE	CRWN	Freeman	Crown
FREE	ORI3	"	Orient #3
FREE	ORI4	"	Orient #4
FREE	ORI5	"	Orient #5
UEC	BK17	United Electric	Buckheart
UEC	CUBA	"	Cuba
UEC	BR27	"	Banner
UEC	FIDL	"	Fidelity

COLUMN HEADING EXPLANATION"Mine Characteristics"

The following is an explanation of the column headings as they appear in "PRODUCER DATA EXHIBITS, Mine Characteristics" in Set P-I, Reports A-D, DEFENDANTS' EXHIBIT NO. 49:

1. Set P-I, Report A

<u>Column:</u>	<u>Explanation:</u>
COAL CO. -	(See Abbreviation Key)
MINE -	(See Abbreviation Key)
PRODUCING DISTRICT -	The Freight Rate District in which the given mine is located
TYPE -	Whether given mine is a strip, deep, or strip/deep mine
TONS -	The 1967 production at the given mine in thousands of tons
TRANSPORTATION USED -	The methods of transportation utilized in 1967 to transport coal from the given mine to consumers

2. Set P-I, Report B

<u>Column:</u>	<u>Explanation:</u>
COAL CO. -	(See Abbreviation Key)
MINE -	(See Abbreviation Key)



- SEAM NO.** - The seam mined at the particular mine in 1967. The digit which appears in the column is the same as the seam number mined, except that the code number "20" has been assigned to the Davis-DeKoven Seam and the code number "50" has been assigned to the Brazil Block Seam. In those cases where more than one seam was mined in 1967, a separate line for each seam is shown.
- RATIO** - The range within which the average overburden ratio at the given mine in 1967 is included
- SEAM THCK** - The thickness in inches of the seam mined in 1967
- MAX OB (In feet)** - The maximum overburden in feet at the mine in 1967
- AVE OB (In feet)** - The average overburden in feet at the mine in 1967
- TOTAL TONS** - The total 1967 production at the given mine in thousands of tons
- PRODUCING DISTRICT** - The Freight Rate District in which the given mine is located

### 3. Set P-I, Report C

- | <u>Column:</u>              | <u>Explanation:</u>  |
|-----------------------------|--|
| <b>COAL CO.</b> -           | (See Abbreviation Key)   |
| <b>MINE</b> -               | (See Abbreviation Key)   |
| <b>PRODUCING DISTRICT</b> - | The Freight Rate District in which the given mine is located         |
| <b>DEPTH DEEP</b> -         | The average depth of mining operations (in feet) for the year 1967   |
| <b>TONS</b> -               | The total production at the given mine for 1967 in thousands of tons |

#### 4. Set P-I, Report D

This Report concerns mines employing both strip and deep mining methods in 1967.

See column explanations for Tables B-C.

COLUMN HEADING EXPLANATION**"Comparison of Leading Producers With Other Producers:  
Mine Size and Characteristics"**

The following is an explanation of the column headings which appear in "PRODUCER DATA EXHIBITS, Comparison of Leading Producers With Other Producers: Mine Size and Characteristics" in Set P-I, Reports F<sub>1</sub>, F<sub>2</sub> and G<sub>2</sub>, DEFENDANTS' EXHIBIT NO. 50:

In Report F<sub>1</sub>, the mine characteristics of all mines of "leading coal producers" are set forth in alphabetical order by producer; in Report F<sub>2</sub>, the mine characteristics of all mines of "other coal producers" are set forth in the same manner.

1. Set P-I, Reports F<sub>1</sub> and F<sub>2</sub>Column:Explanation:

COAL CO. - (See Abbreviation Key)

MINE - (See Abbreviation Key)

SEAM NO. - The seam mined at the particular mine in 1967. The digit which appears in the column is the same as the seam number mined, except that the code number "20" has been assigned to the Davis-DeKoven Seam and the code number "50" has been assigned to the Brazil Block Seam. In those cases where more than one seam was mined in 1967, a separate line for each seam is shown.

- TYPE** - The average seam thickness (in inches) mined in 1967 at the particular mine
- DEPTH DEEP** - For deep mines, the average depth (in feet) of mining operations in 1967
- MAX OB** - For strip mines, the maximum overburden (in feet) for mining operations in 1967
- AVE OB** - For strip mines, the average overburden (in feet) for mining operations in 1967
- RATIO** - For strip mines, the overburden ratio for 1967 mining operations at the particular mine; the code numbers which appear hereunder are explained as follows:
- Code "1" = an overburden ratio of less than 15:1  
 Code "2" = an overburden ratio from 15:1 through 19:1  
 Code "3" = an overburden ratio from 20:1 through 24:1  
 Code "4" = an overburden ratio from 25:1 through 29:1  
 Code "5" = an overburden ratio of 30:1 or more
- W&S** - An "X" in this column indicates that the particular mine has a washer and sizer facility; a BLANK in this column indicates the absence of such a facility at the particular mine
- DRY** - An "X" in this column indicates that the particular mine has a dryer facility; a BLANK in this column indicates the lack of such a facility at this particular mine
- TK** - An "X" in this column indicates that the particular mine has a truck loading facility; a BLANK indicates the lack of such a facility
- RR** - An "X" in this column indicates that the particular mine has a rail loading facility; a BLANK indicates the lack of such a facility
- VOL** - An "X" in this column indicates that the particular mine received a volume rail car rate for shipments in 1967; a BLANK indicates the lack of such a rate for 1967 shipments

UNIT - An "X" in this column indicates that the particular mine has unit train loading equipment; a BLANK in this column indicates the lack of such equipment

BGE - An "X" in this column indicates that the particular mine has barge loading facilities; a BLANK indicates the lack of such facilities

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TOTAL TONS - The total 1967 production in thousands of tons at the particular mine

DRCT - This column indicates that percentage of the total coal sold in 1967 from the particular mine which was sold directly to consumers. Percentages have been coded according to the following table:

"11"	- indicates	100%
"10"	- indicates	90 - 99%
"9"	- indicates	80 - 89%
"8"	- indicates	70 - 79%
"7"	- indicates	60 - 69%
"6"	- indicates	50 - 59%
"5"	- indicates	40 - 49%
"4"	- indicates	30 - 39%
"3"	- indicates	20 - 29%
"2"	- indicates	10 - 19%
"1"	- indicates	1 - 9%
"0"	- indicates	0%

(percentages from Form 225 responses have been rounded to the nearest whole percent prior to assigning the above code numbers)

AGNT - This column indicates that percentage of the total coal sold in 1967 from the particular mine which was sold through an independent sales agency; percentages have been coded according to the above table

WHL - This column indicates that percentage of the total coal sold in 1967 from the particular mine which was sold through a wholesale distributor; percentages have been coded according to the above table

RET - This column indicates that percentage of the total coal sold in 1967 from the particular mine which was sold through a retail distributor; percentages have been coded according to the above table

OTH - This column indicates that percentage of the total coal sold in 1967 from the particular mine which was sold through some other method of sale; percentages have been coded according to the above table

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PRODUCING DISTRICT - The Freight Rate District in which the particular mine is located

## 2. Set P-I, Report G<sub>2</sub>

Report G<sub>2</sub> shows (1) the number of mines in Mining Districts 9, 10, and 11 for which a response to the Court-ordered Subpoena Questionnaire was received whose 1967 production was within the specified ranges and (2) the total 1967 tonnage in thousands of tons for all the mines within each specified range. This has been computed for the following categories:

- (1) all mines,
- (2) all strip mines,
- (3) all deep mines,
- (4) all strip/deep mines, and
- (5) all "leading [company]" mines and all "other [company]" mines, as designated in Set P-I, Reports F<sub>1</sub> and F<sub>2</sub> respectively.



COLUMN HEADING EXPLANATION**Coal Characteristics By  
Producing Districts**

The following is an explanation of the column headings which appear in "PRODUCER DATA EXHIBITS, Coal Characteristics By Producing Districts" in Sets P-2A, P-2B, and P-2C, DEFENDANTS'

EXHIBIT NO. 51:

1. Set P-2A, Reports 1-12

Column:Explanation:

- TONS** - The total 1967 tonnage (in thousands of tons) of (raw) (washed) coal produced at all mines of the given type (strip, deep, or strip/deep) in the producing district specified in the respective reports
- BTU** - The average British Thermal Units (in hundreds of units) of the (raw) (washed) coal produced at all the mines of the given type in the producing district specified in the respective reports; [all averages have been weighted by the number of tons produced at each BTU level in the total sample]
- SULPHUR** - The average sulphur (to the nearest 1/100th of 1%) of the (raw) (washed) coal produced at all the mines of the given type in the producing district specified in the respective reports; [all averages have been weighted by the number of tons produced at each sulphur percentage in the total sample]
- MOIST** - The average moisture (to the nearest one-tenth of 1%) of the (raw) (washed) coal produced at all the mines of the given type in the producing district specified in the respective reports; [all averages have been weighted by the number of tons produced at each moisture percentage in the total sample]

Column:Explanation:

ASH - The average ash (to the nearest one-tenth of 1%) of the (raw) (washed) coal produced at all the mines of the given type in the producing district specified in the respective reports; [all averages have been weighted by the number of tons produced at each ash percentage in the total sample]

FUSION - The average fusion temperature (to the nearest whole degree) of the (raw) (washed) coal produced at all the mines of the given type in the producing district specified in the respective reports; [all averages have been weighted by the number of tons produced at each fusion temperature level in the total sample]

2. Set P-2B, Reports 1-12Column:Explanation:

TONS - See explanation for Set P-2A, Reports 1-12

BTU - -do-

SULPHUR - -do-

MOIST - -do-

ASH - -do-

FUSION - -do-

For each producing district, the above coal characteristics have been computed for raw coal and for washed coal produced according to the following sizes:

Code:Size:

"Size 1" - dust

"Size 2" - carbon (0" x 1/4")

"Size 3" - blends

"Size 4" - screenings

"Size 5" - all other sizes

For each producing district, the above characteristics have been computed for raw coal and for washed coal produced at the strip, deep, and strip/deep mines located in the specified producing district. The summary at the bottom of each Report indicates the total 1967 raw coal production and the total 1967 washed coal production (in thousands of tons) for the specified producing district.

### 3. Set P-2C, Reports 1-3

<u>Column:</u>	<u>Explanation:</u>
MINES -	The number of mines in the given producing district which produced the particular type of coal specified in the respective reports
BTU -	See explanation for Set P-2A, Reports 1 through 1
TONS -	-do-
BTU -	-do-
SULPHUR -	-do-
MOIST -	-do-
ASH -	-do-
FUSION -	-do-

Report 1 is a recapitulation of the washed coal characteristics for all sizes (combined) for each producing district in Mining Districts 9, 10, and 11.

Report 2 is a recapitulation of raw coal characteristics for all sizes (combined) for each producing district in Mining Districts 9, 10, and 11 which produces raw coal.

Report 3 is a recapitulation of the characteristics for the "dust size" coal, both washed and raw, produced in each producing district in Mining Districts 9, 10, and 11 which produces dust.

The summary at the bottom of each report indicates the total number of mines in Mining Districts 9, 10, and 11 which produced coal of the specified type and the aggregate 1967 production of that type at those mines.

COLUMN HEADING EXPLANATION

"Analysis: Overburden of Strip Mines and  
Depth of Deep Mines By Producing Districts"

The following is an explanation of the column headings which appear in "PRODUCER DATA EXHIBITS, Analysis: Overburden of Strip Mines and Depth of Deep Mines By Producing Districts" in Set P-I, Reports E<sub>1</sub> - E<sub>7</sub> and G<sub>1</sub>, DEFENDANTS' EXHIBIT NO. 52:

1. Set P-I, Reports E<sub>1</sub> - E<sub>7</sub>

<u>Column:</u>	<u>Explanation:</u>
COAL CO. -	(See Abbreviation Key)
MINE -	(See Abbreviation Key)
SEAM NO. -	The seam mined at the particular mine in 1967. The digit which appears in the column is the same as the seam number mined, except that the code number "20" has been assigned to the Davis-DeKoven Seam and the code number "50" has been assigned to the Brazil Block Seam. In those cases where more than one seam was mined in 1967, a separate line for each seam is shown.
RATIO* -	The range within which the average overburden ratio at the given mine for 1967 stripping operations is included
SEAM THCK -	Thickness (in inches) of the seam mined in 1967 at the given mine
DEPTH DEEP** -	The average depth of deep mining operations (in feet) for the year 1967

MAX OB\* - The maximum overburden (in feet) at the given mine for 1967 stripping operations

AVE OB\* - The average overburden (in feet) at the given mine for 1967 stripping operations

TOTAL TONS - The total 1967 production at the given mine in thousands of tons

PRODUCING DISTRICT - The Freight Rate District in which the given mine is located

Each report contains mine characteristics for the strip mines (if any), the deep mines (if any), and for the strip/deep mines (if any) located in the producing district(s) as specified in the respective reports.

## 2. Set P-I, Report G<sub>1</sub>

Report G<sub>1</sub> is a "frequency distribution" of average overburden ratios for all strip and strip/deep mines in Mining Districts 9, 10, and 11 for which a response to the Court-ordered Subpoena Questionnaire was received. Under each column which appears under the title "OVERBURDEN RATIO CATEGORY" is listed both the number of strip, or strip/deep, mines which had an average overburden within the given range in 1967 and the total 1967 production in thousands of tons for those mines. For both strip

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\* Applies to strip and strip/deep mines only.

\*\* Applies to deep and strip/deep mines only.



mines and for strip/deep mines, there are summary tables setting forth the average "average overburden" (in feet) for all of the mines listed under each overburden ratio category. These average "average overburden" figures have been weighted by the number of tons which were produced at each average overburden in the total sample.

## GENERAL INSTRUCTIONS

The questionnaires seek two types of information: (1) details concerning purchases of coal of 20,000 tons or more in 1966 and 1967 or equivalent 12-month periods, for each of your facilities located in Illinois, Indiana, Kentucky, Tennessee, Missouri, Iowa, Wisconsin or Minnesota which consumed coal produced in Illinois, Indiana or West Kentucky (mining districts 9, 10 and 11); and (2) information concerning the characteristics of each such facility as they relate to the consumption of coal. The first questionnaire requests separate information for each mine supplying each facility. The second asks for information about the facility itself. Examples of completed questionnaires are provided as a guide.

The information sought should be for the company, organization, or agency named in the subpoena, as well as for all subsidiaries, affiliates and divisions. The forms enclosed may be reproduced or copied if a sufficient number have not been supplied.

Questionnaires should be completed **ONLY** for those facilities located in Illinois, Indiana, Kentucky, Tennessee, Missouri, Iowa, Wisconsin or Minnesota which consumed coal produced in Illinois, Indiana or West Kentucky (mining districts 9, 10 and 11). No questionnaires need be completed for facilities **NOT** located in the states mentioned.

## SPECIFIC INSTRUCTIONS

## I. COAL PURCHASES QUESTIONNAIRE

The information sought should be provided for 1966 and 1967, or equivalent 12-month periods ending as close to December 31, 1966 and December 31, 1967 as possible, for each facility which consumed coal produced in Illinois, Indiana or West Kentucky. For example, if your purchasing "season" or existing contracts terminate on a date other than December 31, use the "seasons" or contract termination dates nearest to December 31 of 1966 and 1967, and indicate the period used at the top of each questionnaire.

A separate form should be used for each mine supplying a particular facility. No form need be filled out for mines whose total shipments of coal to the facility during the year in question were less than 20,000 tons.

Where purchases are made from firms other than actual coal producers, please provide as much information as is known.

The following instructions are numbered to correspond to specifically numbered questions.

#5. If, during the applicable year, more than one purchasing method was used to buy coal from the mine involved, estimate the percentage of the total tons purchased from that mine by each means of purchase.

#6. The information sought in all parts of question #6 should be broken down according to coal size.

#6(a). Please identify each variety of blend, screenings or "other" size supplied.

#6(b). Tons purchased should be broken down according to size and may be approximate.

#6(c). "F.O.B. Mine" should be interpreted as referring to the price per ton at either the mine or its originating shipping point. Contract or purchase order price should be used, gross of discounts, premiums or penalties.

#6(d). This information should correspond either to contract guarantee requirements or, if there is no contract guarantee, to expectation. Results of your own sampling analysis are not necessary, but, if used, should be indicated by "(S)".

#6(e), (f), (g), and (h). For each listed characteristic (i.e., sulphur content, moisture content, ash content, and fusion temperature) indicate, by minimum, maximum or range, as appropriate, the requirements you specified that the coal meet. If no requirement was specified, insert "None."

#7. Please indicate all methods used to transport the coal from the mine involved to your facility. If more than one method of transportation is used, please provide the information requested for each method.

## II. COAL CONSUMING FACILITY QUESTIONNAIRE

This questionnaire should be completed for each facility in Illinois, Indiana, Kentucky, Tennessee, Missouri, Iowa, Wisconsin or Minnesota which consumed 20,000 tons or more of coal in 1967 that was produced in Illinois, Indiana or West Kentucky.

Questions 7, and 8 are designed to obtain information with respect to the characteristics of the coal that was required in 1967 for the type of equipment in which the coal was used at the facility.

## GENERAL INSTRUCTIONS

The questionnaires seek two types of information: (1) details concerning mining conditions, characteristics of coal produced and mine facilities in 1967 for each of your mines in mining districts 9, 10 and 11 (Illinois, Indiana and West Kentucky); and (2) estimates of coal reserves, as of recent date, in mining districts 9, 10 and 11. Examples of completed questionnaires are provided as a guide.

The information sought should be supplied for the company named in the subpoena, as well as for all subsidiaries, affiliates and divisions. The forms enclosed may be reproduced or copied if a sufficient number have not been supplied.

## SPECIFIC INSTRUCTIONS

## I. MINE INFORMATION

The first questionnaire requests separate information for each of your mines. A separate form should be used for each mine. The information sought should be provided for 1967, or, if your records are not kept on a calendar year basis, for the 12-month period ending as close to December 31, 1967 as possible.

Question #10: the information sought in all parts of #10 should be broken down according to coal size. Tons produced [#10(b)] for each coal size may be approximate. Please identify each variety of blend, screenings and "other" size produced. Note that your answer concerning the minimum and maximum price per ton of coal F.O.B. mine [#10(c)] is to be limited to information concerning shipments of 20,000 tons or more to facilities located in Illinois, Indiana, Kentucky, Tennessee, Missouri, Iowa, Wisconsin or Minnesota.

## II. RESERVES

The most recent annual compilation of reserves by your company should be used and the date indicated. Please include date with respect to reserves owned, leased or optioned by any subsidiary, affiliate, division or nominee.

1967

## PLEASE SEE ENCLOSED INSTRUCTIONS BEFORE COMPLETING QUESTIONNAIRE

1. Company and address XYZ Company  
(please include zip code) 126 Main Street  
Metropolis Center, Illinois 60002
2. Name & title of official supervising compliance with subpoena John Smith, Purchasing Director

## COAL PURCHASES

(From Particular Mine for Particular Facility)

Use Separate Form for Each Mine

1967

Note: If information is not available for calendar year 1967, indicate beginning and ending date for 12 month period used (SEE INSTRUCTIONS): Period beginning \_\_\_\_\_, 196\_\_\_\_, ending \_\_\_\_\_, 196\_\_\_\_.

3. Name and location of company's facility: Franklin Works Plant  
Franklin, Illinois 60620
4. Name of supplier and supplying mine: ABC Coal Co.  
Black Beauty No. 1  
(Describe mine by name; if unknown, describe by location or shipping point.)
5. Method(s) of purchase of coal from mine named in #4 (Check appropriate box(es).)
- a. Contract ☒ Percentage of tonnage, if not 100% \_\_\_\_\_ %  
Effective date January 1, 1965  
Termination date December 31, 1972  
Renewal provisions, if any Option to renew for addition 7 years
- b. Purchase Order ☐ Percentage of tonnage, if not 100% \_\_\_\_\_ %.
- c. Other (please specify) ☐ \_\_\_\_\_  
Percentage of tonnage, if not 100% \_\_\_\_\_ %.





7. Method(s) and cost of transportation from supplying mine named in #4. (If the method varied, described separately each method. If cost, by method, varied during year, list each cost and indicate effective date.)

Method #1 AMERICAN COKE & CO. COAL Percent of coal shipped by this method 100 %

(Check appropriate box(es) )

Cost per ton

a. ☐ Truck .....  
 b. ☒ Rail ..... \$ .45  
 c. ☒ Dump ..... .15  
 d. ☒ Barge ..... .80  
 e. ☐ Lake vessel .....  
 Total Cost Per Ton \$1.40

Method #2

Percent of coal shipped by this method \_\_\_\_\_ %

(Check appropriate box(es) )

Cost per ton

a. ☐ Truck .....  
 b. ☐ Rail .....  
 c. ☐ Dump .....  
 d. ☐ Barge .....  
 e. ☐ Lake vessel .....  
 Total Cost Per Ton \_\_\_\_\_

8. Routing(s) of transportation, if known: MOPAC to Ford Dock into Valley Line Barge

9. If route terminated by rail at your facility, designate whether shipments were made in single cars ☐ \_\_\_\_\_ %  
 or volume train rate ☐ \_\_\_\_\_ %, or via unit train ☐ \_\_\_\_\_ %.

(Check appropriate box(es) and state percent of tonnage, if not 100%.)

## PLEASE SEE ENCLOSED INSTRUCTIONS BEFORE COMPLETING QUESTIONNAIRE

1. Company and address  
(please include zip code) XYZ Company  
126 Main Street  
Metropolis Center, Illinois 60002

2. Name & title of officer supervising compliance with subpoena John Smith, Purchasing Director

## COAL CONSUMING FACILITY

(One form for each facility)

1967

Note: If information is not available for calendar year 1967, indicate beginning and ending date for 12 month period used (SEE INSTRUCTIONS): Period beginning \_\_\_\_\_, 196\_\_\_\_; ending \_\_\_\_\_, 196\_\_\_\_

3. Name and location of facility  
(please include zip code, if known) Franklin Works Plant  
Franklin, Illinois 60620

4. Purpose(s) for which coal is purchased (check appropriate box(es)). If coal is purchased for more than one purpose, designate the percentage purchased for each purpose:

- a. Generate power ☒ 100 %  
b. Building heat ☐ \_\_\_\_\_ %  
c. Processing heat ☐ \_\_\_\_\_ %  
d. Making coke ☐ \_\_\_\_\_ %  
e. Other (specify) ☐ \_\_\_\_\_ %

5. For which of the purposes listed in #4 is the facility equipped to use:

a. Gas 4a. ☒ 4b. ☐ 4c. ☐ 4d. ☐ 4e. ☐

b. Oil 4a. ☐ 4b. ☐ 4c. ☐ 4d. ☐ 4e. ☐

c. Other energy 4a. ☒ 4b. ☐ 4c. ☐ 4d. ☐ 4e. ☐

or fuel (please

specify) Purchased

Electricity

6. If a fuel was used in part or in whole in place of coal for any of the purposes designated in #4 during the year 1967, designate purpose and the period of time during which such other fuel was so used:

Fuel	Purpose	Month(s) when used
Gas	4a. <input checked="" type="checkbox"/> 4b. <input type="checkbox"/> 4c. <input type="checkbox"/> 4d. <input type="checkbox"/> 4e. <input type="checkbox"/>	<u>April-September</u>
Oil	4a. <input type="checkbox"/> 4b. <input type="checkbox"/> 4c. <input type="checkbox"/> 4d. <input type="checkbox"/> 4e. <input type="checkbox"/>	_____
Other (specify)	4a. <input type="checkbox"/> 4b. <input type="checkbox"/> 4c. <input type="checkbox"/> 4d. <input type="checkbox"/> 4e. <input type="checkbox"/>	_____

7. Type(s) of fuel burning equipment or kiln in which coal is consumed at this facility

Type #1: Chain Grate, Laclede Model 507

Type #2: Pulverizer, B.&W., with Raymond Bowl Mill

Type #3: \_\_\_\_\_

Type #4: \_\_\_\_\_

8. For each type of equipment or kiln listed in #7, indicate, in terms of minimum or maximum, or both, where range is applicable, those characteristics, if any, that the coal, as burned, must meet.

If none of these characteristics are required, check box ☐

	Type #1		Type #2		Type #3		Type #4	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Coal size	1/4"	1-1/4"		6"				
% of carbon (0"x 1/8")		25						
% of dust		None	20					
% of sulphur (as rec'd)		2.5		2.5				
% of ash (as rec'd)	5	15		27				
% of moisture (as rec'd)		10		12				
BTU (as rec'd)	12,000		14,000					
Fusion temp. (A.S.T.)	2000			2600				

	Yes	No	Yes	No	Yes	No	Yes	No
Washed	X		X					
Washed & heat dried	X		X					

Other requirements  
(please specify):

Type #1 \_\_\_\_\_

Type #2 Grindability Index of 50 (Hardgrove) \_\_\_\_\_

Type #3 \_\_\_\_\_

Type #4 \_\_\_\_\_

9. Are the types of equipment listed in #7 above convertible to use coal with characteristics other than those described above in #8? If yes, state, by each type of equipment, these characteristics which it can be converted to use, the cost of conversion, and time required (in months) for conversion:

Type #1    Yes ☐    No ☒

Characteristics: \_\_\_\_\_

Cost: \_\_\_\_\_

Time Required: \_\_\_\_\_

Type #2    Yes ☐    No ☒

Characteristics: \_\_\_\_\_

Cost: \_\_\_\_\_

Time Required: \_\_\_\_\_

Type #3    Yes ☐    No ☐

Characteristics: \_\_\_\_\_

Cost: \_\_\_\_\_

Time Required: \_\_\_\_\_

Type #4    Yes ☐    No ☐

Characteristics: \_\_\_\_\_

Cost: \_\_\_\_\_

Time Required: \_\_\_\_\_

## PLEASE SEE ENCLOSED INSTRUCTIONS BEFORE COMPLETING QUESTIONNAIRE

1. Company and address  
(please include zip code) ABC COAL CO.  
127 Main Street  
Coalville, Illinois 60001
2. Name & title of official supervising compliance with subpoena John Doe, Exec. Vice-President

**MINE INFORMATION**  
(Use one form for each mine)

1967

Note: If information is not available for calendar year 1967, indicate beginning and ending date for 12 month period used (SEE INSTRUCTIONS): Period beginning \_\_\_\_\_, 196\_\_\_\_; ending \_\_\_\_\_, 196\_\_\_\_.

3. Name of Mine Black Beauty No. 1
4. Seams mined in 1967 No. 5
5. Average seam thickness 52 inches
6. Type of mine (check appropriate box): strip ☒; deep ☐; other (specify) ☐
7. If deep mine, average depth to coal mined during 1967: \_\_\_\_\_
8. If strip mine, depth to coal mined during 1967:  
Average 60 feet  
Maximum 85 feet
9. If strip mine, what was the average overburden ratio for the mine during 1967 (check appropriate box):
- ☒ Less than 15 to 1.  
☐ Between 15 to 1 and 20 to 1.  
☐ Between 20 to 1 and 25 to 1.  
☐ Between 25 to 1 and 30 to 1.  
☐ Over 30 to 1.



1.  $3'' \times 16'' = 48\text{sq}''$   
 2.  $108 \text{ sq}'' \times 1-1/2 = 162\text{sq}''$   
 3.  $162 \text{ sq}'' \times 1-1/2 = 243\text{sq}''$

435,000  
SAMPLE

For a complete list of the books in this series, see the back cover of this book.

11. Preparation and loading facilities available at the mine, whether owned, leased, or used (check appropriate boxes):

## Facility

- a. Washer and Sizer ☒  
 b. Dryer ☒  
 c. Truck Loading (either through silo, bin loading, or from a coal storage pile) ☒  
 d. Rail Loading ☒  
 e. Volume for Car Bins ☒  
 f. Unit Train Loading ☐  
 g. Barge Loading ☐

12. Method(s) of selling coal during 1967 (state % sold by each method):

Method	% of Sales
a. Direct to consumer	94%
b. Through independent sales agency	
c. Through wholesale distributor	2
d. Through retail distributor	4
e. Other (specify) _____	

13. Type of carriers used in shipping coal which was sold during 1967 (check appropriate boxes):

- a. Truck ☒  
 b. Rail ☒  
 c. Barge ☐  
 d. Lake vessel ☐  
 e. Other (specify) \_\_\_\_\_

## PLEASE SEE ENCLOSED INSTRUCTIONS BEFORE COMPLETING QUESTIONNAIRE

1. Company and address
- 
- (please include zip code)

ABC Coal Co.

127 Main Street

Coalville, Illinois 60001

2. Name & title of officer supervising compliance with subpoena

John Doe, Exec. Vice President

## COAL RESERVE ESTIMATE

The estimated tonnage should include all coal owned in fee, under lease or optioned by your company and any subsidiary, affiliate, division or nominee as of the most recent compilation. Only reserves located in mining districts 9, 10 and 11 (Illinois, Indiana or West Kentucky) need be shown.

3. COAL RESERVES DEDICATED TO EXISTING MINES:

NAME OF MINE	Estimated Strip Tonnage (Tons)	Estimated Deep Tonnage (Tons)	Percentage of Recovery Used for Estimated Tonnage	
			Strip	Deep
Black Beauty No. 1	30,000,000		80	
Black Beauty No. 2	20,000,000		80	
Sally Ann		50,000,000		55
Total Tons:	50,000,000	50,000,000		

4. OTHER COAL RESERVES (owned, leased, or optioned by your company or any subsidiary, affiliate, division or nominee, as of most recent compilation, located in mining districts 9, 10, and 11 (Illinois, Indiana, and West Kentucky)):

COUNTY	STATE	Estimated Strip Tonnage (Tons)	Estimated Deep Tonnage (Tons)	Percentage of Recovery Used for Estimated Tonnage	
				Strip	Deep
Coal County	Ill.		47,000,000		55
River County	Ill.	35,000,000		90	
Mine County	Ky.		250,000,000		55
Smith County	Ind.	30,000,000		90	
Total Tons:		65,000,000	297,000,000		

5. Explain briefly methods used for determining percentage of recovery for both strip and deep tonnage: \_\_\_\_\_

Strip: Prior mining experience in seams involved

Deep: Prior mining experience using conventional equipment

6. Information supplied is as of December 31, 1948

## COURT ORDERS

Filed 7/11/69

UNITED STATES DISTRICT COURT  
 NORTHERN DISTRICT OF ILLINOIS  
 EASTERN DIVISION

UNITED STATES OF AMERICA,	)	
	)	
Plaintiff,	)	
	)	CIVIL ACTION
v.	)	
	)	NO. 67 C 1632
GENERAL DYNAMICS CORPORATION;	)	
THE UNITED ELECTRIC COAL	)	
COMPANIES; and FREEMAN COAL	)	
MINING CORPORATION,	)	
	)	
Defendants.	)	

AGREED ORDER

Pursuant to the stipulation of the parties by their respective attorneys, and for the purpose of avoiding the necessity of deposing officers and managerial personnel of the respondents designated below,

IT IS HEREBY ORDERED that the Clerk of the United States District Court for the Northern District of Illinois, Eastern Division, shall issue subpoenas duces tecum in the form attached for service in any judicial district of the United States upon the respondents listed in Exhibit A to this Order. Such service may be made by the Clerk by registered mail, return receipt requested.

Such subpoenas shall command such respondents to appear and produce for examination, inspection, and copying by attorneys for the parties at the Office of the Clerk of the Court of said Northern District of Illinois, Eastern Division, 219 South Dearborn Street, Chicago, Illinois 60604, all documents in respondent's possession showing, in whole or in part, the information requested by the attached questionnaire or, in lieu of such appearance and production, to mail a full and complete response to the questionnaire signed by a responsible officer of the company on which the subpoena is served who has personal knowledge of the company's compliance with the subpoena and under whose supervision compliance is being effectuated.

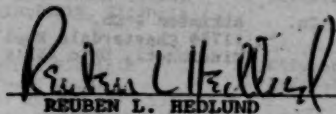
IT IS FURTHER ORDERED that the documents and the contents thereof, and the responses to the attached questionnaire, shall not be disclosed to any officer, director, employee or agent of any defendant or of any coal producer, seller, or customer except upon a showing of good cause and further order of this court.

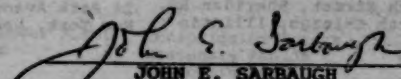
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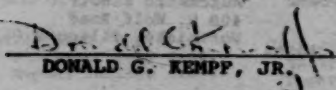
United States District Judge

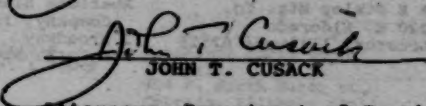


We agree to the entry of the foregoing order this 11<sup>th</sup>  
day of March, 1969.

  
REUBEN L. HEDLUND

  
JOHN E. SARBAUGH

  
DONALD G. KEMPP, JR.

  
JOHN T. CUSACK

Attorneys for  
General Dynamics Corporation,  
The United Electric Coal  
Companies and Freeman Coal  
Mining Corporation

Attorneys, Department of Justice  
Room 2634 United States Courthouse  
Chicago, Illinois 60604

## EXHIBIT A

Abbott Laboratories  
4th Street, Sheridan Rd.  
North Chicago, Illinois

American Distilling Co.  
24 Park Avenue  
New York, New York

Atkinson & Co.  
11750 Chesterdale Road  
Cincinnati, Ohio 45246

A E Staley Mfg. Co.  
220 E. Eldorado  
Decatur, Illinois 62525

American Electric Power  
Company, Inc.  
2 Broadway  
New York, New York 10004

Automatic Electric Company  
400 N. Wolf Road  
Northlake, Illinois 60164

American Maize Products  
Company  
113th & Indianapolis Blvd.  
Moby, Indiana

B.F. Goodrich Co.  
277 Park Avenue  
New York, New York 10017

Brown-Forman Distillers  
Corp.  
1908 Howard Street  
Louisville, Kentucky

Airco Chemicals &  
Plastics  
P.O. Box 97  
Calvert City, Kentucky  
42029

American Motors Corp.  
14250 Plymouth Road  
Detroit, Michigan 48232

Campbell Soup Company  
375 Memorial Avenue  
Camden, New Jersey 08101

Allis-Chalmers Mfg. Co.  
P.O. Box 512  
Milwaukee, Wisconsin  
53201

American Oil Company  
Purchasing Department  
P.O. Box 6110-A  
Chicago, Illinois 60680

Caterpillar Tractor  
Company  
100 N. E. Adams Street  
Peoria, Illinois 61602

Alpha Portland Cement Co.  
15 South 3rd Street  
Easton, Pennsylvania

Anheuser Busch, Inc.  
721 Pestalozzi Street  
St. Louis, Missouri

Celotex Corp.  
1500 N. Dale Mabry  
Tampa, Florida 33607

Alton Box Board Company  
P.O. Box 276  
Alton, Illinois 62002

Argonne National Lab.  
Box 299  
Lemont, Illinois

Central Illinois  
Electric and Gas Co.  
P.O. Box 767  
Chicago, Illinois

American Can Company  
100 Park Avenue  
New York, New York 10017

Arkla Air Conditioning  
Corp.  
Division of Arkla Indiana  
Inc.  
Evansville, Indiana

Central Illinois Light  
300 Liberty Street  
Peoria, Illinois

American Crystal Sugar  
Company  
P.O. Box 419  
Denver, Colorado

Armour & Company  
401 N. Wabash Avenue  
Chicago, Illinois 60690

Central Illinois Public  
Service Co.  
607 East Adams Street  
Springfield, Illinois

Central Electric  
Power Corp.  
P.O. Drawer 127  
Chambers, Missouri 65024

Central Soya Co., Inc.  
300 Ft. Wayne Bank Bldg.  
Ft. Wayne, Indiana 46802

Charmin Paper Products  
Company  
501 East Sixth Street  
Cincinnati, Ohio 45202

Chas. Pfizer and Company,  
Inc.  
235 East 42nd Street  
New York, New York 10017

Chemcoke Division  
Peabody Coal Company  
301 North Memorial Drive  
St. Louis, Missouri 63102

Chrysler Corporation  
341 Massachusetts Ave  
Detroit, Michigan 48231

Cincinnati Gas & Elec. Co.  
P.O. Box 960  
Cincinnati, Ohio

Citizens Gas & Coke  
Utility  
2020 N. Meridian Street  
Indianapolis, Indiana

City Light and Power  
Plant  
Frankfort, Indiana

City of Peru Power Plant  
Peru, Illinois

City of Springfield  
Water & Light & Power  
Departments  
City Hall  
Springfield, Illinois

Clinton Corn Processing  
Company  
Clinton, Iowa 52732

Colgate Palmolive Co.  
300 Park Avenue  
New York, New York 10022

Colt Industries, Inc.  
1290 Avenue of the  
Americas  
New York, New York 10019

Commanding Officer  
U.S. Army  
Iowa City Ammunition Plt  
W. Burlington, Iowa

Commanding Officer  
Rock Island Arsenal  
Rock Island, Illinois

Commercial Solvents Corp.  
P.O. Box 420  
Terre Haute, Indiana

Commonwealth Edison  
Company of Indiana, Inc.  
Old P.O. Annex, Box 767  
Chicago, Illinois 60690

Commonwealth Edison Co.  
72 W. Adams Street  
Chicago, Illinois

Consolidated Papers, Inc.  
Wisconsin Rapids  
Wisconsin 54494

Container Corp. of  
America  
404 F. North Water St.  
Chicago, Illinois 60611

Continental Can Co., Inc.  
633 Third Avenue  
New York, New York 10017

Continental Motors Corp.  
Muskegon, Michigan

Contracting Officer  
Defense Fuel Supply Ctr  
Cameron Station  
Alexandria, Va. 22314

Corn Belt Power Coop  
Bumboldt, Iowa

Corn Products  
International Plaza  
Englewood Cliffs  
New Jersey 07632

Crawfordsville Light  
& Power  
P.O. Box 428  
Crawfordsville, Ind.

4793

Dairyland Power Coop  
2615 E. Avenue S.  
LaCrosse, Wisconsin

Carling and Co.  
201 S. Ashland Avenue  
Chicago, Illinois 60609

Eli Lilly and Company  
740 S. Alabama  
Indianapolis, Indiana

Grain Processing Corp.  
1600 Oregon Street  
Muscatine, Iowa 52761

Deere and Company  
John Deere Road  
Moline, Illinois 61265

Fairfield Municipal  
Light and Power Co.  
Fairfield, Illinois

Granite City Steel Co.  
Granite City, Illinois

Dewey Portland Cement Co.  
Fourth National Bank  
Building  
Tulsa, Oklahoma 74119

Federal Paper Board Co.  
Morris, Illinois

Gulf Oil Corporation  
Gulf Building  
Pittsburgh 30, Pa.

Finance & Accounting  
U.S. Army Procurement  
Joliet, Illinois 60436

Drew Foods Corp.  
3400 N. Wharf  
St. Louis, Mo. 63107

Footo Minerals  
Kemco Operations  
320 Concert Street  
Keokuk, Iowa

Dubuque Packing Company  
Dubuque, Iowa

Ford Motor Company  
American Road  
Dearborn, Michigan 48121

H. Walker & Sons  
2409 S. Washington &  
Edmund Streets  
Peoria, Illinois

Dundee Cement Company  
Dundee, Michigan 48131

Ft. Wayne City Utilities  
308 East Berry Street  
Ft. Wayne, Indiana 46802

Hercules, Inc.  
910 Market Street  
Wilmington, Delaware

Eastern Iowa Light and  
Power Cooperative  
Mountpelier, Iowa

Frankfort City Light  
and Power Plant  
City Building  
Frankfort, Indiana

Hubinger Company  
601 Main Street  
Keokuk, Iowa

E I Du Pont De Nemours  
Company  
Pont Building  
Wilmington, Delaware  
19801

General Motors Corp.  
3044 West Grand Blvd.  
Detroit, Michigan 48202

Illinois Cereal Mills  
Paris, Illinois

Electric Energy Inc.  
Box 165  
Joppa, Illinois

General Tire & Rubber Co.  
1708 Englewood Avenue  
Akron, Ohio 44309

Illinois Power Company  
500 S. 27th Street  
Decatur, Illinois

Indiana and Michigan  
Electric Company  
2101 Spy Run Avenue  
Ft. Wayne, Indiana

Indiana-Ky Elec. Corp.  
Clifty Creek Station  
P.O. Box 97  
Madison, Indiana

Indianapolis Power &  
Light  
25 Monument Circle  
Indianapolis, Ind. 46206

Indiana University  
Purchasing Dept.  
Bloomington, Indiana

Ingalls Shephard Div.  
Wyman-Gordon Company  
146th Street & Wood  
Harvey, Illinois

Inland Steel Co.  
30 W. Monroe Street  
Chicago, Illinois

Interlake Steel Corpora-  
tion  
310 South Michigan Ave  
Chicago, Illinois 60604

International Harvester  
Company  
401 N. Michigan Avenue  
Chicago, Illinois 60611

Interstate Power Co.  
1000 Main Street  
Dubuque, Iowa

Iowa Electric Light  
& Power  
P.O. Box 351  
Cedar Rapids, Iowa

Iowa-Illinois Gas &  
Electric Company  
206 E. 2nd Street  
Davenport, Iowa

Iowa Power and Light  
Company  
823 Walnut Street  
Des Moines, Iowa

Iowa Public Service Co.  
P.O. Box 778  
Sioux City, Iowa

Iowa Southern Utilities  
Company  
300 Sheridan  
Centerville, Iowa 52544

Iowa State Penitentiary  
Fort Madison  
Iowa

J. I. Case Company  
700 State Street  
Racine, Wisconsin 53404

Jasper Municipal Light  
and Water Department  
Seventy & Anderson St.  
Jasper, Indiana

Joseph E. Seagram and  
Sons, Inc.  
375 Park Avenue  
New York, New York 10022

Kankakee State Hospital  
Kankakee, Illinois

Kentucky Utilities Co.  
Lexington, Kentucky

Keystone Steel and Wire  
Company  
Peoria, Illinois

Kimberly Clark Corporation  
North Lake Street  
Neenah, Wisconsin 54946

Kosmos Portland Cement Co.  
Kosmosdale, Kentucky

Lake Superior District  
Power Company  
101 West Second Street  
Ashland, Wisconsin 54806

Lehigh Portland Cement  
Company  
Young Building  
Allentown, Pa. 18105

Libbey-Owens Ford Company  
811 Madison Avenue  
Toledo, Ohio 43624

Logansport Electric  
Light and Power Plant  
Sixth and Broadway  
Logansport, Indiana 46947

Lone Star Cement Corp.  
1800 N. Meridian Street  
Indianapolis, Indiana

Louisville Cement Company  
501 S. Second Street  
Louisville, Kentucky 40207

Louisville Gas & Electric  
Company  
311 West Chestnut Street  
Louisville, Kentucky

- Madison Gas & Electric Co.  
x 1231  
250 W. Fairchild  
Madison, Wisconsin
- Mallinckrodt Chemical Wrks  
2nd & Mallinckrodt Avenue  
St. Louis 17, Missouri
- Manitowoc Public Utilities  
817 Franklin Street  
Manitowoc, Wisconsin
- Marathon Oil Company  
539 South Main Street  
Findlay, Ohio 45840
- Marquette Cement Mfg. Co.  
20 N. Wacker Drive  
Chicago, Illinois
- Marshfield Electric  
and Water Department  
2000 S. Roddis Avenue  
Marshfield, Wisconsin  
54449
- Medusa Portland Cement Co.  
P.O. Box 5668  
Cleveland, Ohio
- Menasha Electric and  
Water Utilities  
182 Main Street  
Menasha, Wisconsin
- Metropolitan Sanitary  
District of Chicago  
100 E. Erie  
Chicago, Illinois
- Mississippi Lime Company  
7 Alby Street  
Alton, Illinois
- Monsanto Company  
800 North Lindbergh Blvd.  
St. Louis, Missouri 63166
- Mosinee Paper Mills Co.  
Mosinee, Wisconsin
- Mt. Carmel Pub Utilities  
Mt. Carmel, Illinois
- Municipal Electric Light  
Department  
Highland, Illinois
- Municipal Water & Elec.  
127 E. 3rd Street  
Muscatine, Iowa
- National Biscuit Company  
425 Park Avenue  
New York, New York 10022
- National Distiller Prod.  
99 Park Avenue  
New York, New York 10016
- National Lead Company  
111 Broadway  
New York, New York 10006
- National Lock Company  
1902 Seventh Street  
Rockford, Illinois 61108
- National Starch & Chemi-  
cal Corporation  
750 Third Avenue  
New York, New York 10017
- Nekoosa Edwards Paper Co.  
Port Edwards  
Wisconsin
- Northeast Missouri  
Electric Power Coop  
P.O. Box 191  
Palmira, Missouri 63461
- Northern Indiana Public  
Service Co.  
5265 Hohman Avenue  
Hammond, Indiana 46320
- Northern States Power  
Company  
414 Nicollet Mall  
Minneapolis, Minn.
- Northwestern States  
Portland Cement  
12 Second Street N.E.  
Mason City, Iowa 50401
- Northwestern University  
Purchasing Dept.  
906 University  
Evanston, Illinois
- Olin Mathieson Chemical  
Corporation  
460 Park Avenue  
New York, New York 10022
- Oscar Mayer & Co.  
910 Mayer Avenue  
Madison, Wisconsin
- Ottawa Silica Co.  
P.O. Box 577  
Ottawa, Illinois 61350
- Owensboro Municipal  
Utilities  
P.O. Box 581  
Owensboro, Kentucky



Owens-Illinois, Inc.  
P.O. Box 1035  
ledo, Ohio 43601

Packaging Corporation  
of America  
1632 Chicago Avenue  
Evanston, Illinois 60201

Penick & Ford, Ltd.  
920 First Street S.W.  
Cedar Rapids, Iowa 52404

Penn-Dixie Cement Corp.  
60 East 42nd Street  
New York, New York 10017

Peru Electric Light  
Department  
9 East Third Street  
Peru, Indiana

Proctor and Gamble Co.  
301 East Sixth Street  
Cincinnati, Ohio 45202

Public Service of Indiana  
1000 E. Main Street  
Plainfield, Indiana

Purdue University  
L.P. Stevens Purch. Agent  
Lafayette, Indiana

Radio Corporation of  
America  
RCA Building  
Rockefeller Plaza  
New York, N.Y. 10020

Republic Steel Corp.  
Republic Building  
Cleveland, Ohio 44101

Richmond Power & Light  
P.O. Box 918  
Richmond, Indiana 47374

Rochelle Municipal  
Utilities  
Rochelle, Illinois

Rochester Electric  
Department  
506 First Avenue N.E.  
Rochester, Minnesota

The Ruberoid Company  
P.O. Box 901  
Joliet, Illinois

Scott Paper Company  
International Airport  
Philadelphia, Pa. 19113

Shell Oil Company  
P.O. Box 262  
Wood River, Illinois

Sherwin Williams Company  
101 Prospect Avenue N.W.  
Cleveland, Ohio 44101

Southern Illinois Power  
Corporation  
Marion, Illinois

Southern Indiana Gas &  
Electric Co.  
20-24 N.W. 4th Street  
Evansville, Indiana

St. Louis Independent  
Packing Company  
824 S. Vandeventer Ave  
St. Louis, Missouri 63111

St. Regis Paper Company  
150 East 42nd Street  
New York, New York 10017

Standard Brands, Inc.  
625 Madison Avenue  
New York, New York 10022

Standard Lime &  
Refractories Co.  
2000 First National Bank  
Bldg.  
Baltimore, Maryland 21203

State of Illinois  
Purchases and Supplies  
Room 400 - State Armory  
Springfield, Ill. 62706

State University of Iowa  
Iowa City, Iowa

Swift and Company  
115 West Jackson Boulevard  
Chicago, Illinois 60604

Tennessee Valley Authority  
223 Edney Building  
Chattanooga, Tenn. 37401

Thilmany Pulp & Paper Co.  
Kaukuna, Wisconsin

U. S. Steel Corp.  
71 Broadway  
New York, New York 10006

Wisconsin Public Service  
Corp.  
P.O. Box 700  
Green Bay, Wisconsin

Uniroyal, Inc.  
Rockefeller Center  
1230 Avenue of the  
Americas  
New York, New York 10020

The Youngstown Sheet  
and Tube Company  
Purchasing Department  
Youngstown, Ohio 44501

Union Carbide Corporation  
Union Carbide Bldg.  
270 Park Avenue  
New York, New York 10017

Washington Light and  
Power Department  
Van Trees and East Third  
Streets  
Washington, Indiana

Union Electric Company  
P.O. Box 149  
St. Louis, Missouri 63166

Wedron Silica Company  
135 S. LaSalle Street  
Chicago, Illinois 60603

Union Starch & Refining  
Company  
Granite City, Illinois

Western Electric Company  
Inc.  
195 Broadway  
New York, New York 10007

United States Glue  
9006 Fifth Avenue  
Oak Creek, Wisconsin 53154

Western Ill. Elec. Coop.  
524 N. Madison  
Carthage, Ill.

U S Industrial Chemicals  
Company  
P.O. Box 208  
Tuscola, Illinois 61953

Weston Paper and  
Manufacturing Company  
910 Harries Building  
Dayton, Ohio 45402

U.S. Naval Training  
Center Supply Office  
Great Lakes, Illinois  
60088

Whirlpool Corporation  
Benton Harbor, Michigan  
49022

University of Illinois  
223 Administration Bldg.  
Urbana, Illinois 61801

Wisconsin Electric Power  
Company  
231 W. Michigan Street  
Milwaukee, Wisconsin  
53201

The University of Iowa  
Purchasing Department  
Iowa City, Iowa 52240

Wisconsin Power and  
Light Company  
122 W. Washington Street  
Madison, Wisconsin

UNITED STATES DISTRICT COURT  
 NORTHERN DISTRICT OF ILLINOIS  
 EASTERN DIVISION

UNITED STATES OF AMERICA,  
 Plaintiff,

v.

GENERAL DYNAMICS CORPORATION;  
 THE UNITED ELECTRIC COAL  
 COMPANIES; and FREEMAN COAL  
 MINING CORPORATION,  
 Defendants.

CIVIL ACTION

NO. 67 C 1632

AGREED ORDER

Pursuant to the stipulation of the parties by their respective attorneys, and for the purpose of avoiding the necessity of deposing officers and managerial personnel of the respondents designated below,

IT IS HEREBY ORDERED that the Clerk of the United States District Court for the Northern District of Illinois, Eastern Division, shall issue subpoenas duces tecum in the form attached for service in any judicial district of the United States upon the respondents listed in Exhibit A to this Order. Such service may be made by the Clerk by registered mail, return receipt requested.

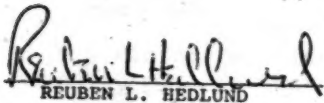
Such subpoenas shall command such respondents to appear and produce for examination, inspection, and copying by attorneys for the parties at the Office of the Clerk of the Court of said Northern District of Illinois, Eastern Division, 219 South Dearborn Street, Chicago, Illinois 60604, all documents in respondent's possession showing, in whole or in part, the information requested by the attached questionnaire or, in lieu of such appearance and production, to mail a full and complete response to the questionnaire signed by a responsible officer of the company on which the subpoena is served who has personal knowledge of the company's compliance with the subpoena and under whose supervision compliance is being effectuated.

IT IS FURTHER ORDERED that the documents and the contents thereof, and the responses to the attached questionnaire, shall not be disclosed to any officer, director, employee or agent of any defendant or of any coal producer, seller, or customer except upon a showing of good cause and further order of this court.

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United States District Judge

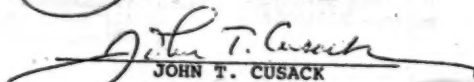
We agree to the entry of the foregoing order this 12  
day of March, 1969.

  
REUBEN L. HEDLUND

  
DONALD G. KEMPF, JR.

Attorneys for  
General Dynamics Corporation,  
The United Electric Coal  
Companies and Freeman Coal  
Mining Corporation

  
JOHN E. SARBAUGH

  
JOHN T. CUSACK

Attorneys, Department of Justice

Room 2634 United States Courthouse  
Chicago, Illinois 60604

## EXHIBIT A

-shire Collieries  
Corporation  
430 Big Four Building  
Indianapolis, Indiana

Barbara-Kay Coal Co., Inc.  
P.O. Box 397  
Marion, Illinois

Basin Cream Coal Co., Inc.  
Carterville, Illinois

Bell & Zoller Coal Co.  
208 South LaSalle Street  
Chicago, Illinois 60604

Belle Valley Coal Co.  
D. 1  
Belleville, Illinois

Big Muddy Coal Co.  
P.O. Box 239  
De Soto, Illinois

Black Tam Mining Co.  
Wheatcroft, Kentucky

Blue Bird Coal Co.  
224 S. Michigan Avenue  
Chicago, Illinois

Bunny Coal & Construction  
Co.  
Madisonville, Kentucky

Burge Coal Co.  
Hartford, Kentucky

Coiltown Mining Co.  
425 S. Main Street  
Madisonville, Kentucky

Consolidation Coal Co.  
Truax-Traer Coal Co. Div.  
111 North Wabash Avenue  
Chicago, Illinois 60602

Decola Coal Co.  
Dawson Springs, Kentucky

Eden Mining Corporation  
Sparta, Illinois

Gibraltar Coal Corp.  
105 S. Meridian Street  
Indianapolis 25, Indiana

Green Coal Co.  
P.O. Box 704  
Owensboro, Kentucky

Harrisburg Coal Co., Inc.  
Marion, Illinois

Houston Coal Co.  
Route 5  
Marion, Illinois

Island Creek Coal Co.  
1501 Euclid Avenue  
Cleveland, Ohio

Kirkpatrick Mining Co.  
P.O. Box 290  
Greenville, Kentucky

Liberty Coal Co.  
Crab Orchard, Illinois

Little Dog Coal Co.  
1724 Railway Exchange  
Building  
611 Olive Street  
St. Louis, Missouri 63101

Mainline Coal Co.  
Desota, Illinois

Marshall Equipment Co.  
Harrisburg, Illinois

Morris Bros. Co.  
Box 539  
Owensboro, Kentucky

Morris Enterprises, Inc.  
2108 East Clinton Place  
Owensboro, Kentucky

New Gallatin Coal Co.  
P.O. Box 411  
Harrisburg, Illinois

Old Ben Coal Corp.  
10 South Riverside Plaza  
Chicago, Illinois 60606

Parton Coal Company  
P.O. Box 332  
Marion, Illinois

Peabody Coal Company  
301 North Memorial Dr.  
St. Louis, Missouri 63102



Pittsburg & Midway Coal  
Mining Co.  
15 West 10th Street  
Kansas City, Mo. 64105

Pyro Mining Co., Inc.  
Wheatcroft, Kentucky

R & N Coal Co.  
Cora, Illinois

R.S. & K. Coal Corp.  
Bicknell, Indiana

Renfro & Kirkwood  
Coal Co.  
Madisonville, Kentucky

Rialto Coal Co., Inc.  
P.O. Box 368  
Madisonville, Kentucky

Sahara Coal Company, Inc.  
59 East Van Buren St.  
Chicago, Illinois 60605

Sherwood-Templeton  
Coal Co., Inc.  
2829 N. Meridian St.  
Indianapolis, Indiana  
46208

Southwestern Illinois  
Coal Corporation  
1514 Merchants Bank Bldg.  
Indianapolis, Indiana

Tab-Badgett Joint Venture  
Coal Co.  
Madisonville, Kentucky

Weirs Creek Co.  
Providence, Kentucky

Williams Bros. Mining  
Co., Inc.  
Bowling Green, Kentucky

Wright Coal Co.  
Box 291  
Greenville, Kentucky

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION

UNITED STATES OF AMERICA,

Plaintiff,

v.

GENERAL DYNAMICS CORPORATION;  
THE UNITED ELECTRIC COAL  
COMPANIES; and FREEMAN COAL  
MINING CORPORATION,

Defendants.

CIVIL ACTION

NO. 67 C 1632

AGREED ORDER

Pursuant to the stipulation of the parties by their  
respective attorneys,

IT IS HEREBY ORDERED that the Agreed Orders entered in  
this case on March 11, 1969 be amended as follows:

1. The subpoenas duces tecum to be issued under such  
Agreed Orders shall be returnable on the 21st day of April, 1969;
2. Such subpoenas shall also be issued to the following:

Big Rivers Rural Electric Coop. Corp.  
223 N. Main Street  
Henderson, Kentucky 42420

Indiana State University  
Purchasing Department  
217 N. 6th Street  
Terre Haute, Indiana 46609

State of Indiana, Division of  
Public Works and Supplies  
Room 510 - 100 North Senate  
Indianapolis, Indiana

Weskol Mining Co.  
Providence, Kentucky

State of Wisconsin Power Plant Engineer  
743 State Office Building  
Madison, Wisconsin

Ajax Coal Co., Inc.  
Box 315  
Marion, Illinois 62959

Arel Coal Sales, Inc.  
Madisonville, Kentucky

B. B. Mining Co.  
Beaver Dam, Kentucky

Caney Creek Coal Co.  
Drakesboro, Kentucky

Dar\*Star Coal, Inc.  
Madisonville, Kentucky

JoLor Mining Co.  
208 S. LaSalle Street - Chicago, Illinois 60601

Russell Badgett, Jr. Coal Co.  
Madisonville, Kentucky

Tab Mining Co.  
P. O. Box 1168  
Carbondale, Illinois

V-Day Coal Co.  
Rural Rt. #1  
Danville, Illinois 61835

Venedy Coal Co.  
Venedy, Illinois 62296

Webster County Coal Corp.  
Clay, Kentucky

United States District Judge

Dated: \_\_\_\_\_.

We agree to the entry of the foregoing order this 21  
day of March, 1969.

REUBEN L. HEDLAND

DONALD G. KEMPF, JR.

Attorneys for  
General Dynamics Corporation,  
The United Electric Coal  
Companies and Freeman Coal  
Mining Corporation

John E. Sarbaugh  
JOHN E. SARBAUGH

John T. Cusack  
JOHN T. CUSACK

Attorneys, Department of Justice

Room 2634 United States Courthouse  
Chicago, Illinois 60604

## SUBPOENA TO PRODUCE DOCUMENTS

## United States District Court

FOR THE  
NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION

UNITED STATES OF AMERICA,

Plaintiff,

vs.

GENERAL DYNAMICS CORPORATION;  
THE UNITED ELECTRIC COAL  
COMPANIES; and FREEMAN COAL  
MINING CORPORATION,


Defendants.

CIVIL ACTION  
FILE NUMBER  
67 C 1632

TO

YOU ARE COMMANDED to appear at ROOM 2634, UNITED STATES COURTHOUSE, 219 SOUTH DEARBORN STREET in the CITY OF CHICAGO, ILLINOIS, on the 21st day April, 1969, at 10:30 o'clock A.M. by direction of the Court pursuant to an order dated March 11, 1969, and agreed to by the parties in the above entitled action pending in the United States District Court for the Northern District of Illinois and to bring with you and to produce at the time and place aforesaid all documents in your possession showing, in whole or in part, the information requested by the attached questionnaire or, in lieu of such appearance and production of documents, to mail to Elbert A. Wagner, Jr., Clerk of the United States District Court for the Northern District of Illinois, 219 South Dearborn Street, Chicago, Illinois 60604, a full and complete response to the attached questionnaire signed by a responsible officer of the company who has personal knowledge of the company's compliance with this subpoena and under whose supervision compliance is being effectuated.

BY ORDER OF THE HONORABLE  
EDWIN A. ROBSON, DISTRICT  
JUDGE, UNITED STATES  
DISTRICT COURT for the  
NORTHERN DISTRICT of  
ILLINOIS

  
Deputy Clerk

## PRODUCER DATA EXHIBITS

DE 49

## Mine Characteristics

KIRKLAND 81118  
U.S. VS GENERAL DYNAMICS  
ALL MINES

SET P-1 ALPORT A

CUM CO.	MINE	PRODUCING DISTRICT	TYPE	TONS (000)	TRANSPORTATION USED		
AVRS	COWK	BRAZIL-CLINTON	STRIP	1147	TRUCK	RAIL	
AVRS	DLTA	SOUTHERN	STRIP	974	RAIL		
AVRS	HARK	DANVILLE	STRIP	627	TRUCK	RAIL	
AVRS	MINN	LINTON-SULLIVAN	STRIP	1424	TRUCK	RAIL	
AVRS	SIMS	FULTON-PEORIA	STRIP	821	TRUCK	RAIL	BARGE
AVRS	THUN	LINTON-SULLIVAN	DEEP	1229	RAIL		
AVRS	WRIT	PRINCETON-AVRSMA	STRIP	1285	RAIL	BARGE	
		AVRS COMPANY TOTAL TONS		7700			
BNKY	BNKY	SOUTHERN	DEEP	112	TRUCK		
		BNKY COMPANY TOTAL TONS		112			
BBNN	EBNY	W.KENTUCKY	STRIP	340	OTHER		
BBNN	ND2	W.KENTUCKY	STRIP	304	OTHER		
		BBNN COMPANY TOTAL TONS		644			
BLVY	BLVY	BELLEVILLE	DEEP	104	TRUCK		
		BLVY COMPANY TOTAL TONS		104			
BLGZ	MRCK	MURDOCK	DEEP	747	TRUCK	RAIL	
BLGZ	ZGL4	SOUTHERN	DEEP	1271	TRUCK	RAIL	BARGE LAKE-VES
BLGZ	ZGL9	W.KENTUCKY	DEEP	533	RAIL	BARGE	
BLGZ	GRIL	W.KENTUCKY	DEEP	636	TRUCK	RAIL	BARGE LAKE-VES
BLGZ	SPRT	BELLEVILLE	DEEP	882	TRUCK	BARGE	
		BLGZ COMPANY TOTAL TONS		4049			
BKTH	BATH	W.KENTUCKY	STRIP	107	RAIL		
		BATH COMPANY TOTAL TONS		107			
BLBD	TAMR	SOUTHERN	DEEP	183	TRUCK	RAIL	





COAL CO.	MINE	PRODUCING DISTRICT	TYPE	TONS (000)	TRANSPORTATION USED			
ISCK	ATKN	W. KENTUCKY	DEEP	1470	RAIL			
ISCK	WILS	W. KENTUCKY	DEEP	231	TRUCK	RAIL		
ISCK	PLSV	W. KENTUCKY	STRIP	567	RAIL			
		ISCK COMPANY TOTAL TONS		8607				
JOLR	JOLR	SOUTHERN	STRIP	89	BARGE			
		JOLR COMPANY TOTAL TONS		89				
KIRK	CANY	W. KENTUCKY	STRIP	870	TRUCK	RAIL	BARGE	LAKE-VES
WRIT	WRIT	W. KENTUCKY	STRIP	521	TRUCK	RAIL	LAKE-VES	
		KIRK COMPANY TOTAL TONS		1391				
MORS	HRTN	W. KENTUCKY	STRIP	58	RAIL			
		MORS COMPANY TOTAL TONS		58				
OLDB	BLKF	PRINCETON-AYRSHR	STRIP	1458	TRUCK	RAIL	LAKE-VES	
OLDB	ENDS	PRINCETON-AYRSHR	STRIP	1675	RAIL	LAKE-VES		
OLDB	KING	PRINCETON-AYRSHR	DEEP	335	TRUCK	RAIL	LAKE-VES	
OLDB	NO21	SOUTHERN	DEEP	2240	TRUCK	RAIL	BARGE	LAKE-VES
OLDB	NO24	SOUTHERN	DEEP	2368	RAIL	LAKE-VES		
OLDB	NO9	SOUTHERN	DEEP	1391	TRUCK	RAIL	BARGE	LAKE-VES
		OLDB COMPANY TOTAL TONS		9467				
PRTN	PRTN	SOUTHERN	DEEP	66	TRUCK			
		PRTN COMPANY TOTAL TONS		66				
PEAB	EAGL	SOUTHERN	STR/DEEP	309	BARGE			
PEAB	EDWD	FULTON-PEDRIA	STRIP	537	TRUCK	RAIL	BARGE	
PEAB	RECD	MINERAL-ATKINSON	STRIP	1248	TRUCK	RAIL		
PEAB	HWST	BELLEVILLE	STR/DEEP	1413	TRUCK			
PEAB	NRTH	NORTHERN	STRIP	755	TRUCK	RAIL		

COAL CO.	MINE	PRODUCING DISTRICT	TYPE	TONS (000)	TRANSPORTATION USED		
PEAR	ARKG	BELLEVILLE	STRIP	5315	TRUCK	RAIL	BARGE
PEAR	NSCR	SOUTHERN	STRIP	1344	RAIL	LAKE-VES	
PEAR	DVND	SPRINGFIELD	DEEP	5722	TRUCK	RAIL	BARGE
PEAR	UTIL	SOUTHERN	DEEP	518	RAIL		
PEAR	ALND	FULTON-PEORIA	STRIP	574	TRUCK	RAIL	BARGE
PEAR	BSTR	FULTON-PEORIA	STRIP	546	TRUCK	RAIL	BARGE
PEAR	NOLG	FULTON-PEORIA	STRIP	1382	TRUCK	RAIL	BARGE
PEAR	ENGY	SOUTHERN	STRIP	904	TRUCK	RAIL	LAKE-VES
PEAR	NHST	W.KENTUCKY	STRIP	2353	BARGE		
PEAR	KBN	W.KENTUCKY	STR/DEEP	2826	RAIL	BARGE	LAKE-VES
PEAR	RVON	W.KENTUCKY	STR/DEEP	5341	RAIL	BARGE	LAKE-VES
PEAR	RIVN	W.KENTUCKY	STRIP	1053	RAIL	LAKE-VES	
PEAR	SACL	W.KENTUCKY	STRIP	4826	RAIL	OTHER	
PEAR	VOGE	W.KENTUCKY	STRIP	2711	RAIL	BARGE	LAKE-VES
PEAR	CHPT	BRAZIL-CLINTON	STRIP	476	TRUCK	RAIL	
PEAR	NHTH	LINTON-SULLIVAN	STRIP	2429	TRUCK	RAIL	
PEAR	LYNV	PRINCETON-AYRSHR	STRIP	3385	TRUCK	RAIL	BARGE LAKE-VES
PEAR	OLGL	LINTON-SULLIVAN	STRIP	601	TRUCK	RAIL	LAKE-VES
PEAR	VICT	PRINCETON-AYRSHR	STRIP	896	TRUCK	RAIL	BARGE
PEAR COMPANY TOTAL TONS				47064			
PTNY	COLD	W.KENTUCKY	STRIP	2022	RAIL	BARGE	LAKE-VES
PTNY	DEK6	W.KENTUCKY	DEEP	1547	BARGE		
PTNY	DEK9	W.KENTUCKY	DEEP	1390	BARGE		
PTNY	PARA	W.KENTUCKY	STRIP	2092	RAIL	BARGE	LAKE-VES
PTNY COMPANY TOTAL TONS				7051			
PYRO	PYRO	W.KENTUCKY	DEEP	1104	RAIL		

COAL CO.	MINE	PRODUCING DISTRICT	TYPE	TONS (000)	TRANSPORTATION USED	
		PYRO COMPANY TOTAL TONS		1104		
RSEK	NO1	LINTON-SULLIVAN	DEEP	114	TRUCK	RAIL
		RSEK COMPANY TOTAL TONS		114		
RIAL	JIFF	W.KENTUCKY	STR/DEEP	454	TRUCK	RAIL
		RIAL COMPANY TOTAL TONS		454		
RUSB	LTLJ	W.KENTUCKY	STRIP	349	RAIL	
		RUSB COMPANY TOTAL TONS		349		
SAMA	S 14	SOUTHERN	DEEP	1688	RAIL	BARGE LAKE-VES
SAMA	NO6	SOUTHERN	STRIP	1120	RAIL	BARGE LAKE-VES
		SAMA COMPANY TOTAL TONS		2808		
SHTP	PION	HINERAL-ATKINSON	STRIP	117	TRUCK	
		SHTP COMPANY TOTAL TONS		117		
SNIL	CAPT	BELLEVILLE	STRIP	5787	RAIL	
SNIL	STAL	BELLEVILLE	STRIP	1533	TRUCK	RAIL
		SNIL COMPANY TOTAL TONS		7320		
TABB	LKVN	W.KENTUCKY	STRIP	567	RAIL	
		TABB COMPANY TOTAL TONS		567		
VDAY	VDAY	DANVILLE	DEEP	48	TRUCK	RAIL
		VDAY COMPANY TOTAL TONS		48		
VEND	VEND	BELLEVILLE	DEEP	33	TRUCK	
		VEND COMPANY TOTAL TONS		33		
WEST	DOTI	W.KENTUCKY	DEEP	406	RAIL	
		WEST COMPANY TOTAL TONS		406		
WICK	SHRK	W.KENTUCKY	STRIP	637	RAIL	
		WICK COMPANY TOTAL TONS		637		
WESH	WESH	W.KENTUCKY	STRIP	151	RAIL	

COAL CO.	MINE	PRODUCING DISTRICT	TYPE	TONS (000)	TRANSPORTATION USED		
WEEK COMPANY TOTAL TONS				151			
FREE	CRWN	SPRINGFIELD	DEEP	2380	TRUCK	RAIL	BARGE
FREE	DR13	SOUTHERN	DEEP	2991	TRUCK	RAIL	BARGE LAKE-VES
FREE	DR14	SOUTHERN	DEEP	1387	TRUCK	RAIL	BARGE LAKE-VES
FREE	DR15	SOUTHERN	DEEP	1669	RAIL	BARGE	LAKE-VES
FREE COMPANY TOTAL TONS				8427			
UEC	BR17	FULTON-PEORIA	STRIP	1904	RAIL	BARGE	
UEC	CUBA	FULTON-PEORIA	STRIP	974	RAIL	BARGE	
UEC	BR27	FULTON-PEORIA	STRIP	834	TRUCK	BARGE	
UEC	FIDL	BELLEVILLE	STRIP	2030	TRUCK	RAIL	BARGE LAKE-VES
UEC COMPANY TOTAL TONS				5742			
ALL COMPANIES TOTAL TONS				125676			

SET P-1

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
STRIP MINES

REPORT 8

COAL	MINE	SEAM NO.	RATIO	SEAM THICK (INCHES)	MAX ON (FEET)	AVE ON (FEET)	TOTAL TONS (000)	PRODUCING DISTRICT
AYRS	CINCK	3	15-1 THRU 19-1	67	120	84	1147	BRAZIL-CLINTON
AYRS	OLTA	6	LESS THAN 15-1	63	90	59	976	SOUTHERN
AYRS	HARM	7	15-1 THRU 19-1	71	120	99	627	DANVILLE
AYRS	RIEM	9	20-1 THRU 24-1	62	120	93	1424	LINTON-SULLIVAN
AYRS	RIEM	7	20-1 THRU 24-1	36	65	52	0	LINTON-SULLIVAN
AYRS	SUNS	2	30-1 OR MORE	28	80	57	621	PULTON-PEORIA
AYRS	WEIT	5	LESS THAN 15-1	49	80	47	1285	PRINCETON-AVONDALE
AYRS	EMMY	9	LESS THAN 15-1	50	65	40	346	M-KENTUCKY
AYRS	NOZ	9	LESS THAN 15-1	50	65	40	304	M-KENTUCKY
AYRS	SMTH	9	LESS THAN 15-1	55	88	60	107	M-KENTUCKY
AYRS	BRGE	9	LESS THAN 15-1	48	79	43	122	M-KENTUCKY
AYRS	BEYR	6	LESS THAN 15-1	66	70	60	1506	BELLEVEILLE
AYRS	BEYR	5	LESS THAN 15-1	40	60	40	1493	BELLEVEILLE
AYRS	BEYR	5	LESS THAN 15-1	55	60	40	8	BELLEVEILLE
AYRS	PLAT	5	15-1 THRU 19-1	58	102	68	1523	PULTON-PEORIA
AYRS	LEIS	5	LESS THAN 15-1	55	92	60	917	PULTON-PEORIA
AYRS	DOON	9	LESS THAN 15-1	54	50	30	5423	M-KENTUCKY
AYRS	BEAL	11	LESS THAN 15-1	47	100	11	2036	M-KENTUCKY



COAL	NINE	SEAM NO.	RATIO	SEAM THICK (INCHES)	MAX OS (FEET)	AVE OS (FEET)	TOTAL TONS (000)	PRODUCING DISTRICT
GBRL	GBRL	12	LESS THAN 15-1	60	100	30	0	W. KENTUCKY
GBRL	GBRL	13	15-1 THRU 19-1	36	100	39	0	W. KENTUCKY
GBRL COMPANY TOTAL TONS							2036	
GREN	PNHR	9	15-1 THRU 19-1	44	125	70	1066	W. KENTUCKY
GREN COMPANY TOTAL TONS							1066	
HSTN	HSTN	6	LESS THAN 15-1	58	30	29	15	SOUTHERN
HSTN COMPANY TOTAL TONS							15	
ISCK	PLSV	9	LESS THAN 15-1	60	80	59	567	W. KENTUCKY
ISCK COMPANY TOTAL TONS							567	
JOLA	JOLA	20	LESS THAN 15-1	48	85	60	89	SOUTHERN
JOLA COMPANY TOTAL TONS							89	
KIRK	CANY	9	LESS THAN 15-1	60	110	75	670	W. KENTUCKY
KIRK	CANY	11	LESS THAN 15-1	72	110	75	0	W. KENTUCKY
KIRK	CANY	12	LESS THAN 15-1	66	110	75	0	W. KENTUCKY
WRIT	WRIT	9	LESS THAN 15-1	60	85	60	521	W. KENTUCKY
WRIT	WRIT	11	LESS THAN 15-1	72	85	60	0	W. KENTUCKY
WRIT	WRIT	12	LESS THAN 15-1	66	85	60	0	W. KENTUCKY
KIRK COMPANY TOTAL TONS							1391	
MORS	HATH	4	LESS THAN 15-1	30	60	30	50	W. KENTUCKY
MORS COMPANY TOTAL TONS							50	
OLDB	BLKF	5	LESS THAN 15-1	48	90	40	1450	PRINCETON-AYRSNR
OLDB	BLKF	5A	LESS THAN 15-1	29	90	40	0	PRINCETON-AYRSNR
OLDB	ENDS	5	15-1 THRU 19-1	47	104	44	1675	PRINCETON-AYRSNR
OLDB COMPANY TOTAL TONS							3125	
PEAR	EDND	6	LESS THAN 15-1	44	44	42	537	FULTON-PEORIA
PEAR	NECD	6	15-1 THRU 19-1	44	51	44	1246	MINERAL-ATKINSON
PEAR	HATH	2	25-1 THRU 29-1	36	85	73	755	NORTHERN
PEAR	HATH	7	25-1 THRU 29-1	36	85	73	0	NORTHERN
PEAR	RENS	6	LESS THAN 15-1	76	75	55	5315	BELLEVILLE

COAL	NINE	SEAM NO.	RATIO	SEAM THICK (INCHES)	MAX OB (FEET)	AVE OB (FEET)	TOTAL TONS (000)	PRODUCING DISTRICT
PEAB	NSCA	20	19-1 THRU 19-1	34	69	65	1344	SOUTHERN
PEAB	ALND	6	LESS THAN 15-1	0	0	0	574	FULTON-PEORIA
PEAB	BSTR	5	15-1 THRU 19-1	53	57	47	546	FULTON-PEORIA
PEAB	BSTR	6	15-1 THRU 19-1	53	57	47	0	FULTON-PEORIA
PEAB	NOLG	5	20-1 THRU 24-1	46	71	60	1382	FULTON-PEORIA
PEAB	NOLG	6	20-1 THRU 24-1	46	71	60	0	FULTON-PEORIA
PEAB	EMGY	6	LESS THAN 15-1	0	0	0	504	SOUTHERN
PEAB	HNST	9	LESS THAN 15-1	52	139	110	2353	W.KENTUCKY
PEAB	HNST	11	LESS THAN 15-1	52	139	110	0	W.KENTUCKY
PEAB	HNST	13	LESS THAN 15-1	52	139	110	0	W.KENTUCKY
PEAB	RIVW	11	LESS THAN 15-1	5	80	55	1053	W.KENTUCKY
PEAB	RIVW	14	LESS THAN 15-1	5	80	55	0	W.KENTUCKY
PEAB	SNCL	9	LESS THAN 15-1	64	70	65	4826	W.KENTUCKY
PEAB	SNCL	11	LESS THAN 15-1	64	70	65	0	W.KENTUCKY
PEAB	SNCL	12	LESS THAN 15-1	64	70	65	0	W.KENTUCKY
PEAB	VOBE	11	LESS THAN 15-1	64	54	50	2711	W.KENTUCKY
PEAB	VOBE	12	LESS THAN 15-1	64	54	50	0	W.KENTUCKY
PEAB	CHFT	7	20-1 THRU 24-1	32	63	61	476	BRAZIL-CLINTON
PEAB	HUTH	5	LESS THAN 15-1	24	42	35	2429	LINTON-SULLIVAN
PEAB	LYHV	6	LESS THAN 15-1	60	50	45	3385	PRINCETON-AYRSHR
PEAB	OLGL	30	15-1 THRU 19-1	30	63	43	601	LINTON-SULLIVAN
PEAB	VICT	5	15-1 THRU 19-1	62	58	55	896	PRINCETON-AYRSHR
PEAB COMPANY TOTAL TONS							30935	
PTHV	COLO	9	LESS THAN 15-1	60	145	71	2022	W.KENTUCKY
PTHV	COLO	11	LESS THAN 15-1	72	145	71	0	W.KENTUCKY
PTHV	COLO	12	LESS THAN 15-1	54	145	71	0	W.KENTUCKY
PTHV	COLO	14	LESS THAN 15-1	96	145	71	0	W.KENTUCKY
PTHV	PARA	9	LESS THAN 15-1	54	120	60	2092	W.KENTUCKY
PTHV	PARA	11	LESS THAN 15-1	72	120	60	0	W.KENTUCKY
PTHV	PARA	12	LESS THAN 15-1	72	120	60	0	W.KENTUCKY
PTHV	PARA	13	LESS THAN 15-1	36	120	60	0	W.KENTUCKY
PTHV COMPANY TOTAL TONS							4114	
RUSB	LTLJ	9	LESS THAN 15-1	58	55	35	369	W.KENTUCKY

COAL	MINE	SEAM NO.	RATIO	SEAM THICK (INCHES)	MAX OB (FEET)	AVE OB (FEET)	TOTAL TONS (000)	PRODUCING DISTRICT
				RUSS COMPANY TOTAL TONS			349	
SAHA	NO6	6	15-1 THRU 19-1	54	70	55	1120	SOUTHERN
				SAHA COMPANY TOTAL TONS			1120	
SHTP	PIGN	6	15-1 THRU 19-1	40	45	39	117	MINERAL-ATKINSON
				SHTP COMPANY TOTAL TONS			117	
SNIL	CAPT	5	LESS THAN 15-1	99	90	82	5787	BELLEVILLE
SNIL	CAPT	6	LESS THAN 15-1	99	90	82	0	BELLEVILLE
SNIL	STAL	6	LESS THAN 15-1	71	71	60	1533	BELLEVILLE
				SNIL COMPANY TOTAL TONS			7320	
TABB	LKVN	11	LESS THAN 15-1	60	50	30	567	N.KENTUCKY
TABB	LKVN	09	LESS THAN 15-1	92	50	30	0	N.KENTUCKY
				TABB COMPANY TOTAL TONS			567	
WICA	SHRK	11	LESS THAN 15-1	72	85	60	637	N.KENTUCKY
WICA	SHRK	14	LESS THAN 15-1	56	85	60	0	N.KENTUCKY
				WICA COMPANY TOTAL TONS			637	
WESK	WESK	9	LESS THAN 15-1	60	60	40	151	N.KENTUCKY
				WESK COMPANY TOTAL TONS			151	
UEC	BR17	5	LESS THAN 15-1	57	65	61	1904	FULTON-PEORIA
UEC	CUBA	5	LESS THAN 15-1	52	54	47	976	FULTON-PEORIA
UEC	BR27	2	LESS THAN 15-1	28	80	28	834	FULTON-PEORIA
UEC	FIDL	6	LESS THAN 15-1	75	80	99	2030	BELLEVILLE
				UEC COMPANY TOTAL TONS			5742	
ALL COMPANIES TOTAL TONS							72841	

SET P-1 REPORT C

KIRKLAND ELLIS  
U.S. VS  
DEEP MINES

COAL CO.	NAME	PRODUCING DISTRICT	DEPTH (FEET)	TONS (000)
AYRS	THOM	LINTON-SULLIVAN	307	1229
		AYRS COMPANY TOTAL TONS		1229
BAKY	BAKY	SOUTHERN	150	112
		BAKY COMPANY TOTAL TONS		112
BLVY	BLVY	SELLEVILLE	100	106
		BLVY COMPANY TOTAL TONS		106
BLZE	MECK	NAGOCK	210	767
BLZE	ZOLA	SOUTHERN	325	1271
BLZE	ZOLA	W.KENTUCKY	345	535
BLZE	ORIL	W.KENTUCKY	240	636
BLZE	SPAT	SELLEVILLE	235	882
		BLZE COMPANY TOTAL TONS		4069
BLSD	THOM	SOUTHERN	120	105
		BLSD COMPANY TOTAL TONS		105
TYTR	WELS	SPRINGFIELD	500	1169
		TYTR COMPANY TOTAL TONS		1169
DCLA	DCLA	W.KENTUCKY	225	102
		DCLA COMPANY TOTAL TONS		102
WASG	WASG	SOUTHERN	60	85
		WASG COMPANY TOTAL TONS		85
ESCK	EDIA	W.KENTUCKY	275	2375
ESCK	PIES	W.KENTUCKY	250	1442
ESCK	CARS	W.KENTUCKY	200	1091

COAL CO.	MINE	PRODUCING DISTRICT	DEPTH (FEET)	TONS (000)
ISCK	UNTN	W. KENTUCKY	390	1473
ISCK	ATKN	W. KENTUCKY	200	1470
ISCK	WILS	W. KENTUCKY	150	231
ISCK COMPANY TOTAL TONS				8040
OLDB	KING	PRINCETON-AVRSHR	450	335
OLDB	NO21	SOUTHERN	656	2240
OLDB	NO24	SOUTHERN	666	2368
OLDB	NO8	SOUTHERN	482	1391
OLDB COMPANY TOTAL TONS				6334
PRTN	PRTN	SOUTHERN	175	66
PRTN COMPANY TOTAL TONS				66
PEAB	DYNO	SPRINGFIELD	404	5722
PEAB	UTIL	SOUTHERN	93	518
PEAB COMPANY TOTAL TONS				6240
PTNY	DEK6	W. KENTUCKY	500	1547
PTNY	DEK9	W. KENTUCKY	800	1390
PTNY COMPANY TOTAL TONS				2937
PYRO	PYRO	W. KENTUCKY	100	1104
PYRO COMPANY TOTAL TONS				1104
RSEK	NO1	LINTON-SULLIVAN	160	114
RSEK COMPANY TOTAL TONS				114
SAHA	S 16	SOUTHERN	175	1688
SAHA COMPANY TOTAL TONS				1688
VDAY	VDAY	DANVILLE	135	48
VDAY COMPANY TOTAL TONS				48
VEND	VEND	BELLEVILLE	260	33

COAL CO.	MINE	PRODUCING DISTRICT	DEPTH (FEET)	TONS (000)
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VEND COMPANY TOTAL TONS 33

WEST DOTI W. KENTUCKY 300 406

WEST COMPANY TOTAL TONS 406

FREE CRNN SPRINGFIELD 354 2380

FREE OR13 SOUTHERN 800 2991

FREE OR14 SOUTHERN 275 1387

FREE OR15 SOUTHERN 612 1669

FREE COMPANY TOTAL TONS 8427

ALL COMPANIES TOTAL TONS 42492





### Comparison of Leading Producers with Other Producers: Mine Size and Characteristics

KIRKLAND ELLIS,  
J.G.S VS GENERAL DYNAMICS  
BY LEADINE

LET P-1 REPORT P-1

[illegible]

COAL CO.	MINE	SEAM NO.	SEAM TYPE	SEAM THICK (INCH)	DEPTH (FT)	MAX DEPTH (FT)	AVE DEPTH (FT)	G&L TOTAL (000)	COMPANY	TOTAL TONS	2024	RATIO W&S DRY TO AIR VOL UNIT				ONLY	AGMT	MIL	REV	OTH	PRODUCING DISTRICT
												W&S	DRY	TO	AIR						
ISCK	EDIA	9	DEEP	62	275	0	0	0	X	X	X	2373	11	0	0	0	0	0	0	0	W-KENTUCKY
ISCK	PFES	11	DEEP	66	250	0	0	0	X	X	X	1442	6	0	0	0	0	0	0	0	W-KENTUCKY
ISCK	CAES	11	DEEP	62	200	0	0	0	X	X	X	1091	9	0	0	0	0	0	0	0	W-KENTUCKY
ISCK	UTRN	9	DEEP	62	250	0	0	0	X	X	X	1473	11	0	0	0	0	0	0	0	W-KENTUCKY
ISCK	ATRN	9	DEEP	60	200	0	0	0	X	X	X	1470	9	0	0	0	0	0	0	0	W-KENTUCKY
ISCK	WELS	4	DEEP	45	150	0	0	0	X	X	X	231	4	0	0	0	0	0	0	0	W-KENTUCKY
ISCK	PLSV	9	STRIP	60	0	80	35	1	X	X	X	567	11	0	0	0	0	0	0	0	W-KENTUCKY
OLDS	SLKP	5	STRIP	45	0	90	40	1	X	X	X	8407									PRINCETON-AVONSH
OLDS	SLKP	5A	STRIP	38	0	90	48	1	X	X	X	1458	0	11	0	0	0	0	0	0	PRINCETON-AVONSH
OLDS	ENOS	5	STRIP	47	0	104	64	2	X	X	X	1675	0	11	0	0	0	0	0	0	PRINCETON-AVONSH
OLDS	KING	5	DEEP	75	450	0	0	0	X	X	X	335	0	11	0	0	0	0	0	0	PRINCETON-AVONSH
OLDS	MOZL	6	DEEP	99	656	0	0	0	X	X	X	2240	9	0	0	0	0	0	0	0	SOUTHERN
OLDS	MOZ4	4	DEEP	95	646	0	0	0	X	X	X	2348	11	0	0	0	0	0	0	0	SOUTHERN
OLDS	MOV	6	DEEP	99	482	0	0	0	X	X	X	1391	10	0	0	0	0	0	0	0	SOUTHERN
PEAR	EACL	5	STR/DEEP	41	149	57	45	1	X	X	X	9467									SOUTHERN
PEAR	EACL	6	STR/DEEP	41	149	57	45	1	X	X	X	309	11	6	0	0	0	0	0	0	SOUTHERN
PEAR	ENOS	6	STRIP	44	0	44	42	1	X	X	X	537	6	6	1	3	0	0	0	0	PULTON-PEORIA
PEAR	MOZL	4	STRIP	44	0	51	44	2	X	X	X	1246	10	0	0	1	0	0	0	0	MINERAL-ATLANTON
PEAR	MOZT	6	STR/DEEP	84	48	51	47	1	X	X	X	1413	10	0	0	1	0	0	0	0	RELEVILLE
PEAR	WELN	3	STRIP	36	0	85	73	4	X	X	X	795	10	0	0	1	0	0	0	0	NORTHERN
PEAR	WELN	7	STRIP	36	0	85	73	4	X	X	X	10	0	0	1	0	0	0	0	0	NORTHERN
PEAR	REAG	6	STRIP	76	0	75	55	1	X	X	X	5319	10	0	1	1	0	0	0	0	RELEVILLE
PEAR	WELN	20	STRIP	36	0	80	65	2	X	X	X	1344	10	0	1	0	0	0	0	0	SOUTHERN





KIRKLAND ELLIS  
 U.S. VS GENERAL DYNAMICS  
 OTHER

SET A-1 REPORT #2

COAL MINE CO.	SEAM NO.	TYPE	SEAM THICK (INCH)	DEPTH DEEP (FT)	MAX OS (PT)	Avg OS (PT)	RATIO 465 DRY	TX	RA	VOL UNIT	FOR TOTAL TONS (000)	ORCT	AGNT	WHE	RET	OTH	PRODUCING DISTRICT
BRKY BRKY	5	DEEP	52	150	0	0	0	0	X	X	112	10	1	0	0	0	SOUTHERN
BRKY COMPANY TOTAL TONS											112						
BRNN BRNN	9	STRIP	50	0	45	40	1				340	0	0	0	0	11	W. KENTUCKY
BRNN NG2	9	STRIP	50	0	45	40	1				304	0	0	0	0	11	W. KENTUCKY
BRNN COMPANY TOTAL TONS											644						
BLVY BLVY	6	DEEP	64	180	0	0	0	X	X	X	106	4	0	0	7	0	SELLEVILLE
BLVY COMPANY TOTAL TONS											106						
BKTN BKTN	9	STRIP	55	0	85	60	1	X			107	0	11	0	0	0	W. KENTUCKY
BKTN COMPANY TOTAL TONS											107						
BLBO TOMB	5	DEEP	50	120	0	0	0	X	X		183	0	11	0	0	0	SOUTHERN
BLBO COMPANY TOTAL TONS											183						
BAGE BAGE	9	STRIP	48	0	75	43	1	X	X		132	10	0	0	1	0	W. KENTUCKY
BAGE COMPANY TOTAL TONS											132						
ORAS BOON	9	STRIP	54	0	50	30	1	X			418	0	0	0	0	11	W. KENTUCKY
ORAS COMPANY TOTAL TONS											418						
DCLA DCLA	9	DEEP	40	225	0	0	0	X			102	0	9	0	2	0	W. KENTUCKY
DCLA COMPANY TOTAL TONS											102						
GRNN PMA	9	STRIP	46	0	125	70	2	X	X	X	1044	10	0	1	0	0	W. KENTUCKY
GRNN COMPANY TOTAL TONS											1044						
HAGG HGG	5	DEEP	50	60	0	0	0	X	X		85	11	0	0	0	0	SOUTHERN
HAGG COMPANY TOTAL TONS											85						
HSTN HSTN	6	STRIP	56	0	30	25	1				15	0	11	0	0	0	SOUTHERN
HSTN COMPANY TOTAL TONS											15						
JOLA JOLA	20	STRIP	48	0	85	60	1				89	0	11	0	0	0	SOUTHERN





COAL NAME	SEAM NO.	TYPE	SEAM THICK (INCH)	DEPTH (FT)	MAX AVE DEEP (FT)	RATIO	WES DRY	FE	NR	VOL UNIT	SEE	TOTAL TONS	DMCT	AGMT	WML	SET	OTH	PRODUCING DISTRICT
<hr/>																		
WEST BUTE	9	DEEP	34	300	0	0	0	0	0	0	0	38	406	10	1	0	0	M. KENTUCKY
VEND COMPANY TOTAL TONS													406					
<hr/>																		
NICH SINK	11	STRIP	72	0	25	40	1	X	X	X	X	437	11	0	0	0	0	M. KENTUCKY
NICH SINK	14	STRIP	54	0	25	40	1	X	X	X	X	0	11	0	0	0	0	M. KENTUCKY
NICH COMPANY TOTAL TONS													437					
WESK WESK	9	STRIP	60	0	60	40	1	0	0	0	0	131	11	0	0	0	0	M. KENTUCKY
WESK COMPANY TOTAL TONS													131					
ALL COMPANIES TOTAL TONS													964					



PRODUCER DATA EXHIBITS DX 51

Coal Characteristics by Producing Districts

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
COAL CHARACTERISTICS

SET P-2A REPORT 1.

NORTHERN 01

TONS BTU SULPHUR MOIST ASH FUSION  
(000) (00) (%) (%) (%) (TEMP)

STRIP

RAW

WASHED

TOTAL TONS RAW

TOTAL TONS WASHED

0 0 0.0 0.0 0.0 0  
755 112 2.56 15.2 7.4 2077

0

755

FILE NO. 419  
BY AP. 10/10/10  
10/10/10

10/10/10

KIRKLAND ELLIS  
U.S. VS. GENERAL DYNAMICS  
COAL CHARACTERISTICS

SET P-2A REPORT 2.

MINERAL-ATKINSON 02 11.4 10.5 50.2 10.50

TONS BTU SULPHUR MOIST ASH FUSION  
(000) (00) (2) (2) (2) (TEMP)

STRIP

RAW	0	0	0.0	0.0	0.0	0
WASHED	1365	104	2.36	19.6	6.7	2144

TOTAL TONS RAW 0  
TOTAL TONS WASHED 1365

SET P-2A REPORT 3.

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
COAL CHARACTERISTICS

FULTON-PEORIA 03

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STRIP	TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
RAW	856	99	2.90	16.2	11.4	1970
WASHED	9156	107	2.66	17.2	22.2	2063
TOTAL TONS RAW	856					
TOTAL TONS WASHED	9156					



SET P-2A REPORT 4.

KIRKLAND ELLIS  
U.S. VS. GENERAL DYNAMICS  
COAL CHARACTERISTICS

SPRINGFIELD 04

	TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
DEEP						
RAW	1264	99	3.83	15.0	13.8	2100
WASHED	8007	102	3.76	15.1	14.9	2078

TOTAL TONS RAW 1264

TOTAL TONS WASHED 8007

SET P-2A REPORT 5.

KIRKLAND ELLIS  
U.S. VS. GENERAL DYNAMICS  
COAL CHARACTERISTICS

DANVILLE 05

TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
---------------	-------------	----------------	--------------	------------	------------------

## STRIP

RAW	0	0	0.0	0.0	0
-----	---	---	-----	-----	---

## WASHED

	627	113	2.60	14.0	7.8	2040
--	-----	-----	------	------	-----	------

## DEEP

RAW	0	0	0.0	0.0	0.0	0
-----	---	---	-----	-----	-----	---

## WASHED

	48	108	1.94	11.6	10.6	2100
--	----	-----	------	------	------	------

TOTAL TONS RAW

0

TOTAL TONS WASHED

675

SET P-2A REPORT 6.

KIRKLAND ELLIS  
U.S. VS. GENERAL DYNAMICS  
COAL CHARACTERISTICS

MUROCK 06

DEEP	TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
RAW	0	0	0.0	0.0	0.0	0
WASHED	747	118	1.92	11.2	7.3	2250

TOTAL TONS RAW

TOTAL TONS WASHED

0

747

SET P-2A REPORT 7.

KIRKLAND ELLIS  
U.S. VS. GENERAL DYNAMICS  
COAL CHARACTERISTICS

BELLEVILLE 07  
-----

	TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (%) (TEMP)
STRIP						
RAW	2944	109	3.98	10.2	13.5	2199
WASHED	14904	112	3.29	10.9	10.4	2177
DEEP						
RAW	38	110	3.75	10.0	9.6	2036
WASHED	983	112	2.76	10.5	9.2	2131
STRIP/DEEP						
RAW	0	0	0.0	0.0	0.0	0
WASHED	1413	110	3.37	13.8	9.0	2135
TOTAL TONS RAW						2982
TOTAL TONS WASHED						17300

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
COAL CHARACTERISTICS

SET 9-2A REPORT 8.

426

SOUTHERN 09

TONS BTU SULPHUR MOIST ASH FUSION  
(000) (BTU) (S) (S) (TEMP)

STRIP

RAW 104 117 4.07 5.4 14.1 2150  
WASHED 3944 123 2.85 7.4 9.0 2168

DEEP

RAW 3475 112 2.77 9.1 12.6 2181  
WASHED 12294 119 1.61 9.5 9.2 2222

STRIP/DEEP

RAW 309 111 4.12 6.1 16.7 2122  
WASHED 0 0 0.0 0.0 0.0 0

TOTAL TONS RAW 4088  
TOTAL TONS WASHED 16238

SET P-2A REPORT 9.

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
COAL CHARACTERISTICS

BRAZIL-CLINTON 20

TONS BTU SULPHUR MOIST ASH FUSION  
(000) (00) (1) (1) (1) (TEMP)

STRIP

RAW

WASHED

TOTAL TONS RAW

TOTAL TONS WASHED

COAL TONS RAW 2000  
COAL TONS WASHED 1623  
TOTAL TONS WASHED 1623

COAL TONS RAW 2000  
COAL TONS WASHED 1623  
TOTAL TONS WASHED 1623



KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
COAL CHARACTERISTICS

SET P-2A REPORT 10

428

LINTON-SULLIVAN 21

TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
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STRIP

RAW

WASHED

DEEP

RAW

WASHED

TOTAL TONS RAW

TOTAL TONS WASHED

715

5282

601	116	1.45	19.1	6.3	2391
4053	112	2.62	13.9	8.8	2219
114	105	3.50	14.0	15.0	2000
1229	113	3.40	13.4	9.1	2082

KIRKLAND ELLIS  
U.S. VS. GENERAL DYNAMICS  
COAL CHARACTERISTICS

SET P-2A REPORT 11

PRINCETON-AYRSHIRE 22

TONS BTU SULPHUR MOIST ASH FUSION  
(000) (B) (2) (TEMP)

STRIP

RAW 2029 109 3.68 12.0 11.7 2087  
WASHED 4670 113 3.05 12.2 9.3 2126

DEEP

RAW 82 110 1.60 14.0 10.1 2150  
WASHED 253 120 1.40 12.0 5.3 2185

TOTAL TONS RAW 2111

TOTAL TONS WASHED 6923

KIRKLAND ELLIS  
U.S. VS. GENERAL DYNAMICS  
COAL CHARACTERISTICS

W. KENTUCKY 30

	TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
STRIP						
RAW	10293	110	4.25	9.0	14.6	2191
WASHED	12957	116	2.94	10.6	8.9	2204

DEEP

RAW	7967	117	3.77	6.7	13.1	2009
WASHED	9791	123	2.93	8.5	7.5	2056

STRIP/DEEP

RAW	3186	115	3.93	9.6	10.7	2020
WASHED	5435	118	3.12	10.0	8.6	2063

TOTAL TONS RAW 21406

TOTAL TONS WASHED 24183

KIRKLAND ELLIS  
U.S. VS. GENERAL DYNAMICS  
COAL CHARACTERISTICS

NORTHERN 01

	TONS (000)	BTU (000)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
SIZE-2						
RAW	0	0	0.0	0.0	0.0	0
WASHED	93	110	2.92	16.5	7.2	2085
SIZE-4						
RAW	0	0	0.0	0.0	0.0	0
WASHED	619	112	2.57	15.0	7.5	2075
SIZE-5						
RAW	0	0	0.0	0.0	0.0	0
WASHED	43	113	2.51	15.0	6.8	2083
TOTAL TONS RAW	0					
TOTAL TONS WASHED	755					

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
COAL CHARACTERISTICS

MINERAL-ATKINSON 02

	TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
SIZE-2						
RAW	0	0	0.0	0.0	0.0	0
WASHED	1	107	2.10	20.0	5.0	2050
SIZE-3						
RAW	0	0	0.0	0.0	0.0	0
WASHED	38	111	2.47	17.3	5.4	2150
SIZE-4						
RAW	0	0	0.0	0.0	0.0	0
WASHED	1319	104	2.36	19.7	6.7	2144
SIZE-5						
RAW	0	0	0.0	0.0	0.0	0
WASHED	11	105	2.44	18.9	6.7	2129
TOTAL TONS RAW						
TOTAL TONS WASHED	1365					

SET P-28 REPORT 3.

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
COAL CHARACTERISTICS

FULTON-PEORIA 03

TONS (1000)	BTU (100)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
----------------	--------------	----------------	--------------	------------	------------------

## SIZE-2

RAW	0	0	0.0	0.0	0
-----	---	---	-----	-----	---

## WASHED

95	112	2.75	15.4	7.4	2090
----	-----	------	------	-----	------

## SIZE-3

RAW	0	0	0.0	0.0	0
-----	---	---	-----	-----	---

## WASHED

263	114	3.07	13.9	9.9	2123
-----	-----	------	------	-----	------

## SIZE-4

RAW	0	0	0.0	0.0	0
-----	---	---	-----	-----	---

WASHED	8157	107	2.44	17.1	24.0	2061
--------	------	-----	------	------	------	------

## SIZE-5

RAW	856	99	2.90	16.2	11.4	1970
-----	-----	----	------	------	------	------

WASHED	641	104	2.49	19.6	7.5	2055
--------	-----	-----	------	------	-----	------

## TOTAL TONS RAW

856

## TOTAL TONS WASHED

9156



KIRKLAND ELLIS  
U.S. VS. GENERAL DYNAMICS  
COAL CHARACTERISTICS

SET P-28 REPORT 4.

484

SPRINGFIELD 04

	TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
SIZE-1						
RAW	91	98	3.50	16.4	12.8	2100
WASHED	0	0	0.0	0.0	0.0	0
SIZE-3						
RAW	0	0	0.0	0.0	0.0	0
WASHED	160	106	3.30	13.9	9.9	2040
SIZE-4						
RAW	1169	99	3.66	14.9	13.9	2100
WASHED	2064	105	3.40	14.8	10.4	2133
SIZE-5						
RAW	4	107	3.90	14.0	10.1	2050
WASHED	5783	100	3.90	15.2	16.7	2059
TOTAL TONS RAW						1264
TOTAL TONS WASHED						8007

SET P-28 REPORT 5.

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
COAL CHARACTERISTICS

DANVILLE 05

TONS BTU SULPHUR MOIST ASH FUSION  
(000) (00) (%) (%) (%) (TEMP)

## SIZE-1

RAW

0 0 0.0 0.0 0.0 0

WASHED

9 95 2.00 15.1 15.0 2100

## SIZE-4

RAW

0 0 0.0 0.0 0.0 0

WASHED

657 113 2.97 13.8 7.9 2062

## SIZE-5

RAW

0 0 0.0 0.0 0.0 0

WASHED

9 113 1.67 13.5 8.2 2100

TOTAL TONS RAW

0

TOTAL TONS WASHED

675

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
COAL CHARACTERISTICS

MURDOCK 06  
-----

	TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
SIZE-3						
RAW	0	0	0.0	0.0	0.0	0
WASHED	151	122	1.60	10.0	6.3	2250
SIZE-4						
RAW	0	0	0.0	0.0	0.0	0
WASHED	587	117	1.95	11.5	7.6	2250
SIZE-5						
RAW	0	0	0.0	0.0	0.0	0
WASHED	9	123	1.75	9.2	7.5	2250
TOTAL TONS RAW	0					
TOTAL TONS WASHED	747					

KIRKLAND ELLIS  
U.S. VS. GENERAL DYNAMICS  
COAL CHARACTERISTICS

BELLEVILLE 07

	TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
SIZE-2						
RAW	5	90	3.59	9.4	12.2	N.A.
WASHED	340	109	3.01	13.2	8.8	2147
SIZE-3						
RAW	10	113	3.77	10.2	9.4	2036
WASHED	99	114	2.70	9.1	8.9	2150
SIZE-4						
RAW	2959	109	3.98	10.2	13.9	2198
WASHED	16673	112	3.28	11.0	10.2	2172
SIZE-5						
RAW	12	113	3.77	10.2	9.4	2036
WASHED	228	112	3.19	11.9	9.1	2136
TOTAL TONS RAW	2962					
TOTAL TONS WASHED	17900					

KIRKLAND ELLIS  
U.S. VS. GENERAL DYNAMICS  
COAL CHARACTERISTICS

SET P-28 REPORT 8.

438

SOUTHERN 09

	TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
SIZE-1						
RAW	775	109	2.07	10.6	11.3	2157
WASHED	637	113	1.93	10.7	10.6	2121
SIZE-2						
RAW	44	110	1.36	8.6	12.7	2266
WASHED	1211	115	1.93	9.8	10.1	2170
SIZE-3						
RAW	59	109	3.00	7.0	15.0	2010
WASHED	3774	116	1.59	9.6	8.3	2236
SIZE-4						
RAW	2667	113	3.12	8.7	13.5	2193
WASHED	8599	122	2.13	8.4	8.3	2209
SIZE-5						
RAW	543	114	3.17	7.1	14.9	2125
WASHED	2017	122	1.87	8.5	7.7	2179
TOTAL TONS RAW	4068					
TOTAL TONS WASHED	16236					

SET P-28 REPORT 9.

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
COAL CHARACTERISTICS

BRAZIL-CLINTON 20

	TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
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## SIZE-2

RAW	0	0	0.0	0.0	0.0	0
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## WASHED

WASHED	71	108	1.10	17.0	8.2	2570
--------	----	-----	------	------	-----	------

## SIZE-4

RAW	0	0	0.0	0.0	0.0	0
-----	---	---	-----	-----	-----	---

## WASHED

WASHED	1454	116	3.22	12.6	7.8	2213
--------	------	-----	------	------	-----	------

## SIZE-5

RAW	0	0	0.0	0.0	0.0	0
-----	---	---	-----	-----	-----	---

## WASHED

WASHED	98	110	1.09	16.2	8.2	2560
--------	----	-----	------	------	-----	------

TOTAL TONS RAW

0

TOTAL TONS WASHED

1623



SET P-28 REPORT 10

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
COAL CHARACTERISTICS

LINTON-SULLIVAN 21

	TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
SIZE-2						
RAW	24	108	1.83	17.0	8.9	2325
WASHED	30	101	2.85	17.1	12.0	2390
SIZE-3						
RAW	92	105	3.50	14.0	15.0	2000
WASHED	0	0	0.0	0.0	0.0	0
SIZE-4						
RAW	446	116	1.43	19.1	6.2	2395
WASHED	527	112	2.80	13.7	8.8	2186
SIZE-5						
RAW	133	117	1.46	14.7	5.9	2389
WASHED	5	111	2.76	14.4	9.0	2330
TOTAL TONS RAW	715					
TOTAL TONS WASHED	522					

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
COAL CHARACTERISTICS

PRINCETON-AYRSHIRE 22

	TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
SIZE-2						
RAW	62	110	1.60	14.0	10.1	2150
WASHED	75	106	3.18	13.5	11.8	2070
SIZE-4						
RAW	2029	109	3.68	12.0	11.7	2087
WASHED	6277	113	2.99	12.3	9.2	2128
SIZE-5						
RAW	0	0	0.0	0.0	0.0	0
WASHED	571	117	3.02	11.0	8.2	2144
TOTAL TONS RAW	2111					
TOTAL TONS WASHED	6923					

SET P-28 REPORT 12

KIRKLAND ELLIS  
U.S. VS. GENERAL DYNAMICS  
COAL CHARACTERISTICS

W. KENTUCKY 30

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	TONS (1000)	BTU (100)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
SIZE-2						
RAW	82	108	2.66	12.3	12.4	2080
WASHED	732	115	3.02	11.3	9.4	2185
SIZE-3						
RAW	418	111	3.67	11.1	10.8	N.A.
WASHED	1328	122	2.67	8.9	8.3	2213
SIZE-4						
RAW	7928	115	4.08	7.7	13.1	2099
WASHED	19123	118	3.01	10.0	8.6	2164
SIZE-5						
RAW	12976	112	4.01	8.4	13.9	2110
WASHED	3000	120	2.91	9.4	7.7	2054
TOTAL TONS RAW	21406					
TOTAL TONS WASHED	24183					

## SET P-26 REPORT 12

KIRKLAND ELLIS  
U-S VS GENERAL DYNAMICS  
COAL CHARACTERISTICS

## ALL DISTRICTS

TOTAL TONS RAN 33422

TOTAL TONS WASHED 92254

SET P-26 REPORT 12

## SET P-2C REPORT 1.

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
WASHED COAL CHARACTERISTICS

	MINES	TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
NORTHERN 01	1	755	112	2.56	15.2	7.4	2077
MINERAL-ATKINSON 02	2	1365	104	2.36	19.6	6.7	2144
FULTON-PEORIA 03	10	9156	107	2.66	17.2	22.2	2063
SPRINGFIELD 04	2	8007	102	3.76	15.1	14.9	2078
DANVILLE 05	2	675	113	2.55	13.8	8.0	2063
MURDOCK 06	1	747	118	1.92	11.2	7.3	2250
BELLEVILLE 07	9	17300	112	3.27	11.1	10.2	2171
SOUTHERN 09	16	16238	120	1.94	6.9	8.4	2208
BRAZIL-CLINTON 20	2	1623	115	3.00	13.2	7.6	2249
LINTON-SULLIVAN 21	3	5282	112	2.80	13.8	8.9	2187
PRINCETON-AYRESHIRE 22	5	6923	113	2.99	12.2	9.1	2128
W.KENTUCKY 30	20	24183	118	2.98	9.9	8.5	2146
TOTALS	73	92254					

SET P-2C REPORT 2.

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
RAW COAL CHARACTERISTICS

MINES	TONS (1000)	BTU (100)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
FULTON-PEORIA 03	1 856	99	2.90	16.2	11.4	1970
SPRINGFIELD 04	2 1264	99	3.83	15.0	13.8	2100
BELLEVILLE 07	5 2982	109	3.98	10.2	13.5	2197
SOUTHERN 09	14 4088	112	2.90	8.8	13.3	2176
LINTON-SULLIVAN 21	2 715	114	1.72	15.0	7.4	2339
PRINCETON-AYRSHIRE 22	3 2111	109	3.60	12.1	11.6	2089
W.KENTUCKY 30	25 21406	113	4.02	8.2	13.5	2107
TOTALS	52 33422					

REPROD COPY CHARACTERS  
U.S. VS GENERAL DYNAMICS  
KIRKLAND ELLIS

SEA 5-5C 1950/12/1



**KIRKLAND ELLIS  
U.S. VS. GENERAL DYNAMICS  
DUST COAL CHARACTERISTICS**

SET P-2C REPORT 3.

	MINES	TONS (000)	BTU (00)	SULPHUR (%)	MOIST (%)	ASH (%)	FUSION (TEMP)
SPRINGFIELD 04 RAW	1	91	98	3.50	16.4	12.6	2100
DANVILLE 05 WASHED	1	9	95	2.00	15.1	15.0	2100
SOUTHERN 09 WASHED	5	617	113	1.53	10.7	10.6	2121
SOUTHERN 09 RAW	2	775	109	2.07	10.6	11.3	2157
<b>TOTALS</b>	<b>9</b>	<b>1512</b>					

1. The following are the names of the persons who have been appointed to the various positions in the organization of the National Association of Manufacturers:



KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
ALL NINES-PULTON PEORIA DISTRICT.

SET #1-1 REPORT 22

COAL MINE CO.	SEAM NO.	RATIO	SEAM THICK (INCHES)	DEPTH (FEET)	MAX OR (FEET)	AVE OR (FEET)	TOTAL TONS (000)	PRODUCING DISTRICT
AYRS SUGS	2	50-1 OR MORE	20	0	00	37	621	PULTON-PEORIA
TYTR PIAT	5	15-1 THRU 10-1	50	0	102	60	1525	PULTON-PEORIA
TYTR LSTS	5	LESS THAN 15-1	55	0	92	60	917	PULTON-PEORIA
PEAR ECHO	4	LESS THAN 15-1	44	0	44	42	537	PULTON-PEORIA
PEAR ALMO	6		0	0			574	PULTON-PEORIA
PEAR BSTR	5	15-1 THRU 10-1	53	0	57	47	546	PULTON-PEORIA
PEAR BSTR	6	15-1 THRU 10-1	55	0	57	47	0	PULTON-PEORIA
PEAR MGLG	5	20-1 THRU 24-1	44	0	71	60	1362	PULTON-PEORIA
PEAR MGLG	6	20-1 THRU 24-1	44	0	71	60	0	PULTON-PEORIA
UEC BELY	5	LESS THAN 15-1	57	0	65	61	1004	PULTON-PEORIA
UEC CUSA	5	LESS THAN 15-1	52	0	56	47	974	PULTON-PEORIA
UEC BR27	2	LESS THAN 15-1	20	0	00	20	834	PULTON-PEORIA

TOTAL TONS 10012

WEIGHTED AVE. MAX. OVERBURDEN 79  
WEIGHTED AVERAGE AVE. OVERBURDEN 55

DISTRICT TOTAL TONS 10012

STRIP NINES

REPORT 83

SET P-1

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
ALL NIMS-SPRINGFIELD DISTRICT.

COAL NIMS CO.	SEAM NO.	RATIO	SEAM THICK (INCHES)	DEPTH DEEP (FEET)	MAX DEPT (FEET)	AVE DEPT (FEET)	TOTAL TONS	PRODUCING DISTRICT
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DEEP NIMS

TAIR MILS	6		75	500			1169	SPRINGFIELD
PEAS DYNO	6		84	404			5722	SPRINGFIELD
FREE CANN	6		84	354			2380	SPRINGFIELD

TOTAL TONS

9271

DISTRICT TOTAL TONS

9271

KIRKLAND ELLIS  
 U.S. VS. GENERAL DYNAMICS  
 ALL MINES-BELLEVILLE DISTRICT.

SET P-1 REPORT 84

COAL CO.	MINE	SEAM NO.	RATIO	SEAM THICK (INCHES)	DEPTH DEEP (FEET)	MAX ON (PERCENT)	AVE ON (PERCENT)	TOTAL TONS (000)	PRODUCING DISTRICT
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## STRIP MINES

TATR	BST2	6	LESS THAN 15-1	64	0	70	40	1900	BELLEVILLE
TATR	BST3	5	LESS THAN 15-1	40	0	40	40	1633	BELLEVILLE
TATR	BST3	6	LESS THAN 15-1	55	0	40	40	0	BELLEVILLE
PEAR	RKNG	6	LESS THAN 15-1	76	0	75	55	5316	BELLEVILLE
SWIL	CAPT	5	LESS THAN 15-1	99	0	70	62	5767	BELLEVILLE
SWIL	CAPT	6	LESS THAN 15-1	99	0	70	62	0	BELLEVILLE
SWIL	STRL	6	LESS THAN 15-1	71	0	71	60	1853	BELLEVILLE
UEC	PEOL	6	LESS THAN 15-1	75	0	60	59	2030	BELLEVILLE

TOTAL TONS 17848

 WEIGHTED AVE. MAX. OVERBURDEN 78  
 WEIGHTED AVERAGE AVE. OVERBURDEN 64

## DEEP MINES

BLVY	BLVY	6		64	100			104	BELLEVILLE
BLLE	SPRT	6		76	235			882	BELLEVILLE
VENO	VENO	6		93	260			33	BELLEVILLE

TOTAL TONS 1021

## STRIP/DEEP MINES

PEAR	MUST	6	LESS THAN 15-1	84	48	53	47	1413	BELLEVILLE
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TOTAL TONS 1413

 WEIGHTED AVE. MAX. OVERBURDEN 53  
 WEIGHTED AVERAGE AVE. OVERBURDEN 47

DISTRICT TOTAL TONS 20262

SET P-1 REPORT IS

 KIRKLAND ISLES  
 U.S. VS. GENERAL DYNAMICS  
 ALL NIMS-SOUTHERN DISTRICT.

COAL CB.	NIMS	SEAM NO.	RATIO	SEAM THICK (INCHES)	DEPTH FEET	MAX PERCENT	AVE ON DISTRICT	TOTAL TONS	PRODUCING DISTRICT
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## STRIP NIMS

ATRS	DLTA	6	LESS THAN 15-1	63	0	90	99	976	SOUTHERN
HSTN	HSTN	6	LESS THAN 15-1	28	0	30	25	15	SOUTHERN
JOLA	JOLA	20	LESS THAN 15-1	44	0	85	60	89	SOUTHERN
PEAS	WICK	20	15-1 THRU 15-1	34	0	69	65	1344	SOUTHERN
PEAS	DMY	6		6	0			504	SOUTHERN
SAMA	HON	6	15-1 THRU 15-1	54	0	70	38	1120	SOUTHERN
TOTAL TONS									4648
WEIGHTED AVE. MAX. OVERBURDEN									75
WEIGHTED AVERAGE AVE. OVERBURDEN									60

## DEEP NIMS

DMY	DMY	5		52	150			112	SOUTHERN
DLZ	ZOL	6		94	325			1271	SOUTHERN
DLG	THU	5		50	120			163	SOUTHERN
HDS	HDS	5		50	60			89	SOUTHERN
DLG	HZ1	6		99	656			2240	SOUTHERN
DLG	HZ2	6		99	646			2348	SOUTHERN
DLG	HON	6		99	482			1371	SOUTHERN
PRTH	PRTH	5		52	175			64	SOUTHERN
PEAS	UTIL	6		74	93			916	SOUTHERN
SAMA	S 16	5		64	175			1688	SOUTHERN







KIRKLAND ELLIS  
 U.S. VS. GENERAL DYNAMICS  
 ALL MINES-W. KENTUCKY DISTRICT.

SET P-1 REPORT 87

COAL CO.	MINES	SEAM NO.	RATIO	SEAM THICK (INCHES)	DEPTH ORSP (FEET)	MAX ON (FEET)	AVE ON (FEET)	TOTAL TONS	PRODUCING DISTRICT
BAON	SBMT	9	LESS THAN 15-1	50	0	65	40	340	W. KENTUCKY
BAON	H02	9	LESS THAN 15-1	50	0	65	40	306	W. KENTUCKY
BAON	MTW	9	LESS THAN 15-1	55	0	85	40	107	W. KENTUCKY
BAON	BA66	9	LESS THAN 15-1	48	0	75	43	122	W. KENTUCKY
BAON	BAON	9	LESS THAN 15-1	54	0	50	30	618	W. KENTUCKY
BAON	BAON	11	LESS THAN 15-1	57	0	100	11	2036	W. KENTUCKY
BAON	BAON	12	LESS THAN 15-1	48	0	100	50	0	W. KENTUCKY
BAON	BAON	13	15-1 THRU 16-1	36	0	100	50	0	W. KENTUCKY
BAON	BAON	9	15-1 THRU 16-1	44	0	125	70	1046	W. KENTUCKY
BAON	BAON	9	LESS THAN 15-1	48	0	80	55	567	W. KENTUCKY
BAON	BAON	9	LESS THAN 15-1	40	0	110	75	870	W. KENTUCKY
BAON	BAON	11	LESS THAN 15-1	72	0	110	75	0	W. KENTUCKY
BAON	BAON	12	LESS THAN 15-1	66	0	110	75	0	W. KENTUCKY
BAON	BAON	9	LESS THAN 15-1	40	0	85	40	521	W. KENTUCKY
BAON	BAON	11	LESS THAN 15-1	72	0	85	40	0	W. KENTUCKY
BAON	BAON	12	LESS THAN 15-1	44	0	85	40	0	W. KENTUCKY
BAON	BAON	6	LESS THAN 15-1	30	0	40	30	50	W. KENTUCKY
BAON	BAON	9	LESS THAN 15-1	32	0	139	110	2355	W. KENTUCKY
BAON	BAON	11	LESS THAN 15-1	52	0	139	110	0	W. KENTUCKY
BAON	BAON	12	LESS THAN 15-1	52	0	139	110	0	W. KENTUCKY
BAON	BAON	11	LESS THAN 15-1	5	0	40	55	1053	W. KENTUCKY
BAON	BAON	14	LESS THAN 15-1	5	0	40	55	0	W. KENTUCKY
BAON	BAON	9	LESS THAN 15-1	44	0	70	45	4626	W. KENTUCKY
BAON	BAON	11	LESS THAN 15-1	44	0	70	45	0	W. KENTUCKY
BAON	BAON	12	LESS THAN 15-1	44	0	70	45	0	W. KENTUCKY
BAON	BAON	11	LESS THAN 15-1	44	0	54	50	2711	W. KENTUCKY

STRIP MINES

COAL CO.	MINE	SEAM NO.	RATIO	SEAM THICK (INCHES)	DEPTH DEEP (FEET)	MAX ON (FEET)	AVE ON (FEET)	TOTAL TONS	PRODUCING DISTRICT
PEARL	VOSE	12	LESS THAN 15-1	66	0	56	50	0	W. KENTUCKY
PTNY	COLO	9	LESS THAN 15-1	40	0	145	71	2822	W. KENTUCKY
PTNY	COLO	11	LESS THAN 15-1	72	0	145	71	0	W. KENTUCKY
PTNY	COLO	12	LESS THAN 15-1	56	0	145	71	0	W. KENTUCKY
PTNY	COLO	14	LESS THAN 15-1	66	0	145	71	0	W. KENTUCKY
PTNY	PARA	9	LESS THAN 15-1	56	0	120	60	2092	W. KENTUCKY
PTNY	PARA	11	LESS THAN 15-1	72	0	120	60	0	W. KENTUCKY
PTNY	PARA	12	LESS THAN 15-1	72	0	120	60	0	W. KENTUCKY
PTNY	PARA	13	LESS THAN 15-1	36	0	120	60	0	W. KENTUCKY
RUS8	LTJ	9	LESS THAN 15-1	56	0	55	35	369	W. KENTUCKY
TAB8	LVU	11	LESS THAN 15-1	60	0	50	30	567	W. KENTUCKY
TAB8	LVU	09	LESS THAN 15-1	32	0	50	30	0	W. KENTUCKY
WICK	SHOE	11	LESS THAN 15-1	72	0	85	60	637	W. KENTUCKY
WICK	SHOE	14	LESS THAN 15-1	56	0	85	60	0	W. KENTUCKY
WEEK	WEEK	9	LESS THAN 15-1	40	0	60	40	151	W. KENTUCKY
TOTAL TONS 23216									
WEIGHTED AVE. MAX. OVERMINOR									53
WEIGHTED AVERAGE AVE. OVERMINOR									60

## DEEP MINES

BL 12	ZOL 9	9		72	345			535	W. KENTUCKY
BL 12	ORIL	11		72	240			634	W. KENTUCKY
DCLA	DCLA	9		60	225			102	W. KENTUCKY
ESCK	BOIA	9		62	275			2379	W. KENTUCKY
ESCK	PIES	11		66	250			1442	W. KENTUCKY
ESCK	CRES	11		62	200			1051	W. KENTUCKY
ESCK	UMTH	9		62	360			1475	W. KENTUCKY
ESCK	ATEK	9		60	200			1470	W. KENTUCKY
ESCK	WILS	6		48	150			231	W. KENTUCKY
PTNY	DEKA	6		50	500			1547	W. KENTUCKY



KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
STRIP MINING CHARACTERISTICS

SET P-1 REPORT 01

OVERBURDEN RATIO CATEGORY

LESS THAN 15-1 15-1 THRU 19-1 20-1 THRU 24-1 25-1 THRU 29-1 30-1 OR MORE

STRIP MINES

NO. OF MINES

TOTAL TONNAGE

WEIGHTED AVERAGE AVE. OVERBURDEN

STRIP/DEEP MINES

NO. OF MINES

TOTAL TONNAGE

WEIGHTED AVERAGE AVE. OVERBURDEN

37 13 3 1 1

52759 13946 3482 755 821

59 62 76 73 57

5 0 0 0 0

10343 0 0 0 0

56 0 0 0 0



CONSUMER DATA EXHIBITS  
 DE 53  
 Boiler Specifications

KIRKLAND ELLIS  
 U.S. VS. GENERAL DYNAMICS  
 BOILER SPECIFICATIONS  
 ALL FACILITIES

SET C-2 REPORT 17

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-----COAL CHARACTERISTICS SPECIFIED-----

	TOTAL	SIZE	SULPHUR MAX	ASH	MOISTURE	PUSTON	OTHER	BTU	WASHED	NO SPECS	CAN CONVERT
NUMBER OF FACILITIES	289	250	177	187	203	174	82	192	177	25	34
PERCENT	100.0	86.5	61.2	66.2	70.2	60.2	28.4	66.8	61.2	8.7	12.1
TOTAL TONS	90283	71726	60794	66930	68016	70069	56499	69443	19939	8946	2965
PERCENT	100.0	79.4	67.3	74.1	75.3	77.6	62.5	76.9	22.2	9.9	3.3

SET C-2 REPORT 2.

KIRKLAND ELLIS  
U.S. VS GENERAL DYNAMICS  
BOILER SPECIFICATIONS

## UTILITIES

## -----COAL CHARACTERISTICS SPECIFIED-----

NUMBER OF FACILITIES PERCENT	TOTAL	SIZE	SULPHUR MAX	ASH	MOISTURE	FUSION	OTHER	BTU	WASHED	NO SPECS	CAN CONVERT
	112	40	60	71	82	80	52	69	36	12	4
	100.0	76.0	93.6	63.4	73.2	71.4	44.4	61.6	22.1	10.7	3.6
TOTAL TONS PERCENT	76331	40047	52214	57566	59102	63324	53340	61390	9540	7042	533
	100.0	76.5	66.2	75.2	77.2	82.7	69.7	60.1	12.5	9.2	6.7

## NON-UTILITIES STEAM COAL

NUMBER OF FACILITIES PERCENT	172	156	113	122	117	91	29	120	137	10	31
	100.0	91.9	65.7	70.9	66.0	52.9	16.9	65.6	74.7	5.8	18.6
TOTAL TONS PERCENT	12216	10536	7401	3229	7775	5930	2349	7341	2890	1509	2433
	100.0	86.2	60.6	67.3	63.6	48.5	19.4	60.1	72.6	12.4	19.9

The above category entitled "Non-Utilities Steam Coal" consists of all manufacturing firms and institutions OTHER than those purchasing metallurgical coal solely for the purpose of coking.

KIRKLAND ELLIS  
U.S. VS. GENERAL DYNAMICS  
BOILER SPECIFICATIONS

SET C-2 REPORT 24

## TYPE 1.

## -----COAL CHARACTERISTICS SPECIFIED-----

NUMBER OF FACILITIES PERCENT	TOTAL	SIZE	SULPHUR MAX	ASH	MOISTURE	FUSION	OTHER	BTU	WASHED	NO SPECS	CAN CONVERT
	84	64	44	52	44	64	42	54	16	11	2
	100.0	76.2	52.4	61.9	76.2	78.6	50.0	66.7	19.0	13.1	2.4
TOTAL TONS PERCENT	74202	57849	50826	55777	57389	61624	52373	60589	8459	4989	454
	100.0	78.0	68.5	75.2	77.3	83.0	76.4	81.7	11.4	9.4	0.6

## TYPE 2.

NUMBER OF FACILITIES PERCENT	TOTAL	SIZE	SULPHUR MAX	ASH	MOISTURE	FUSION	OTHER	BTU	WASHED	NO SPECS	CAN CONVERT
	28	24	16	19	18	14	10	13	20	1	2
	100.0	89.7	57.1	67.4	64.3	50.0	39.7	46.4	71.4	3.6	7.1
TOTAL TONS PERCENT	2329	2178	1368	1769	1713	1709	1067	701	1101	53	79
	100.0	93.5	59.6	76.8	73.6	73.0	45.8	30.1	47.3	2.3	3.4

"Type 1" is the code number given "LARGE UTILITIES", "Type 2" is the code for "SMALL UTILITIES". The distinction between the two categories is based upon a comparison of the type of power system and the total tons of coal purchased by that system in 1967. Thus, the classification "SMALL UTILITIES (Type 2)" represents all cooperative and municipal power systems whose facilities in the aggregate purchased less than 900,000 tons of coal in 1967. The classification "LARGE UTILITIES (Type 1)" consists of all corporate power systems, public or private, and all cooperative or municipal systems whose 1967 total coal consumption at all facilities combined was 900,000 or more.

## DEFENDANT'S EXHIBIT 54

## Consumer Data Exhibits, Types of Sales by Producing Districts

SET C-1 REPORT 1

KIRKLAND ELLIS  
U.S. VS. GENERAL DYNAMICS  
TYPE OF SALES BY PRODUCING DISTRICT

DISTRICT	UTILITIES	COKING	OTHER	TOTAL
NORTHERN 01	0	0	573	573
MINERAL-ATKINSON 02	1015	0	98	1113
FULTON-PEORIA 03	6109	0	2421	8530
SPRINGFIELD 04	9371	0	370	9741
DANVILLE 05	186	0	91	277
MURDOCK 06	116	0	532	648
BELLEVILLE 07	16374	0	1843	18217
SOUTHERN 08	10808	1437	2995	15240
BRAZIL-CLINTON 20	324	36	366	726
LINTON-SULLIVAN 21	2726	61	544	3331
PRINCETON-AYRESBIRE 22	6603	0	704	7307
W. KENTUCKY 30	22901	0	1601	24502
ALL DISTRICTS TOTAL	76531	1534	12218	90283

## DEFENDANT'S EXHIBIT 55

ANALYSIS OF SALES TO ELECTRIC UTILITIES OF COAL  
PRODUCED IN FULTON-PEORIA FREIGHT RATE DISTRICT

## 1. Utility Facilities Located in Fulton-Peoria Sales Area

Company	Facility	City	County	State
Illinois	Havanna	Havanna	Mason	Illinois
	Hennepin	Hennepin	Putnam	Illinois
CILCO	Edwards	Bartonville	Peoria	Illinois
	Liberty	Peoria	Peoria	Illinois
	Wallace	E. Peoria	Tazewell	Illinois
CIPS	Meredosia	Meredosia	Morgan	Illinois

## 2. Coal Consumption by Utility Facilities Located in Fulton-Peoria Sales Area

	Tons Consumed (000)	% of Total Consumption
Fulton-Peoria Production Consumed by Utilities in Sales Area	2250	87%
Consumption of Coal Produced in Other Freight Rate Districts in Mining Districts 9, 10 & 11 <sup>1</sup>		
Belleville	316	12
Mineral Atkinson	81	1
	347	13%
<b>TOTAL CONSUMPTION BY UTILITIES IN SALES AREA</b>	<b>2597</b>	<b>100%</b>

## 3. Fulton-Peoria Production Sold to Utilities

	Tons Produced (000)	% of Total Production
Sold to Utilities in Sales Area	2250	37%
Sold to Commonwealth Edison	3855	63%
Sold to Other Utilities	0	0%
<b>TOTAL PRODUCTION SOLD TO UTILITIES BY MINES IN FULTON- PEORIA FRT. DIST.</b>	<b>6105</b>	<b>100%</b>

Source: Form 150, Subpoena Questionnaire

<sup>1</sup> Excludes shipment of 92,000 tons of dust from Crown Mine in Springfield District to Meredosia facility of CIPS.

# ANALYSIS OF SALES TO NON-UTILITY FACILITIES OF COAL PRODUCED IN THE FULTON-PEORIA FREIGHT RATE DISTRICT

## 1. Non-Utility Facilities in Fulton-Peoria Sales Area

Company	City	County	State
E. I. Dupont	Clinton	Clinton	Iowa
Grain Processing	Muscatine	Muscatine	Iowa
Standard Brands	Clinton	Clinton	Iowa
Dewey P. Cement	Buffalo	Muscatine	Iowa
Rock Island Arsenal	Rock Island	Rock Island	Illinois
Deere and Company	E. Moline	Rock Island	Illinois
Alpha P. Cement	LaSalle	LaSalle	Illinois
Marquette Cement	Oglesby	LaSalle	Illinois
Nabisco	Marseilles	LaSalle	Illinois
Ottawa Silica Co.	Ottawa	LaSalle	Illinois
Libbey-Owens Ford	Ottawa	LaSalle	Illinois
American Distilling	Pekin	Tazewell	Illinois
Corn Products	Pekin	Tazewell	Illinois
Standard Brands	Pekin	Tazewell	Illinois
Caterpillar Tractor	Peoria	Peoria	Illinois
Caterpillar Tractor	E. Peoria	Tazewell	Illinois
Celotex Corporation	Peoria	Peoria	Illinois
H. Walker & Sons	Peoria	Peoria	Illinois
Keystone Steel & Wire	Bartonville	Peoria	Illinois
Medusa Portland Cement	Dixon	Lee	Illinois

## 2. Coal Consumption by Non-Utility Facilities Located in Fulton-Peoria Sales Area

	Tons Consumed (000)		% of Total Consumption	
Fulton-Peoria Production Consumed by Non-Utilities in Sales Area	1701		85%	
Consumption of Coal Produced in Other Freight Rate Districts in Mining Districts 9, 10 & 11				
Southern Illinois	212 <sup>1</sup>	11		
Mineral Atkinson	44	2		
W. Kentucky	36	2	15%	
<b>TOTAL CONSUMPTION BY NON- UTILITIES IN SALES AREA</b>	<b>1993</b>		<b>100%</b>	

<sup>1</sup> Includes 73,000 tons (4%) of low-sulphur coal (1.2%) from Freeman's Orient #3 Mine in the Southern Freight District to the Dixon plant of Medusa Portland Cement for Equipment requiring coal having a maximum sulphur content of 1.2%. See Medusa Portland Cement Form 150, Subpoena Questionnaire and letter of August 15, 1968 from Thompson, Hine and Flory to Plaintiff.



## 3. Fulton-Peoria Production Sold to Non-Utilities

	<u>Tons Produced (000)</u>	<u>% of Total Production</u>
Sold to Non-Utilities in Sales Area	1701	70%
Sold to Greater Chicago Air Quality Control Region	586	24
Sold to Other Non-Utilities	<u>134</u>	<u>6%</u>
<b>TOTAL PRODUCTION SOLD TO NON- UTILITIES FROM MINES IN FULTON- PEORIA FRT. DIST.</b>	<b>2421</b>	<b>100%</b>

Source: Form 150, Subpoena Questionnaire

# RECAPITULATION OF SALES OF COAL PRODUCED IN THE FULTON-PEORIA FREIGHT RATE DISTRICT

## 1. Coal Consumption by All Facilities in Fulton-Peoria Sales Area

	<u>Tons Consumed (000)</u>	<u>% of Total Consumption</u>
Fulton-Peoria Production Consumed by All Facilities in Sales Area	3951	86%
Consumption of Coal Produced in Other Freight Rate Districts in Mining Districts 9, 10 & 11 <sup>1</sup>		
Belleville	316	7%
Southern Illinois	212	5%
Mineral-Atkinson	75	2%
W. Kentucky	36	1%
	639	14%
<b>TOTAL CONSUMPTION OF COAL BY FACILITIES IN SALES AREA</b>	<b>4590</b>	<b>100%</b>

## 2. Fulton-Peoria Production Sold to All Facilities

	<u>Tons Produced (000)</u>	<u>% of Total Production</u>
Sold to Facilities in Sales Area	3951	46%
Sold to Commonwealth Edison	3855	45%
Sold to Chicago Air Quality Control Region	586	7%
Sold to Other Facilities	134	2%
<b>TOTAL</b>	<b>8526</b>	<b>100%</b>

<sup>1</sup> Excludes shipment of 92,000 tons of dust from Crown Mine in Springfield District to Meredosia facility of CIPS.

Includes 73,000 tons (4%) of low-sulphur coal (1.2%) from Freeman's Orient #3 Mine in the Southern Freight District to the Dixon plant of Medusa Portland Cement for equipment requiring coal having a maximum sulphur content of 1.2%. See Medusa Portland Cement Form 150, Subpoena Questionnaire and letter of August 15, 1968 from Thompson, Hine and Flory to Plaintiff.

# ANALYSIS OF SALES TO ELECTRIC UTILITIES OF COAL PRODUCED IN SPRINGFIELD FREIGHT RATE DISTRICT

## 1. Utility Facilities Located In Springfield Sales Area

Company	Facility	County	State
CIPS	Coffeen	Montgomery	Illinois
SPRINGFIELD WLAP	Springfield	Sangamon	Illinois

## 2. Coal Consumption by Utility Facilities Located in Springfield Sales Area

	<u>Tons Consumed (000)</u>	<u>% of Total Consumption</u>
Springfield Production Consumed by Utilities in Sales Area	1489	100%
Consumption of Coal Produced in Other Freight Rate Districts in Mining Districts 9, 10 & 11	0	0%
<b>TOTAL CONSUMPTION BY UTILITIES IN SALES AREA</b>	<b>1489</b>	<b>100%</b>

## 3. Springfield Production Sold to Utilities<sup>1</sup>

	<u>Tons Produced (000)</u>	<u>% of Total Production</u>
Sold to Utilities in Sales Area	1489	16%
Sold to Commonwealth Edison	7584	82%
Sold to Other Utilities	206	2%
<b>TOTAL PRODUCTION SOLD TO UTILITIES BY MINES IN SPRING- FIELD FRT. DIST.</b>	<b>9279</b>	<b>100%</b>

<sup>1</sup> Excludes 92,000 tons of dust shipped from the Crown Mine of Freeman to the Meredosia facility of CIPS. See CIPS Form 150 (Meredosia). Subpoena Questionnaire.

Source: Form 150, Subpoena Questionnaire

# ANALYSIS OF SALES TO NON-UTILITY FACILITIES OF COAL PRODUCED IN THE SPRINGFIELD FREIGHT RATE DISTRICT

## 1. Non-Utility Facilities in the Springfield Sales Area

Company	City	County	State
A. E. Staley	Decatur	Macon	Illinois
Caterpillar Tractor	Decatur	Macon	Illinois

## 2. Coal Consumption by Non-Utility Facilities Located in Springfield Sales Area

	<u>Tons Consumed (000)</u>	<u>% of Total Consumption</u>
Springfield Production Consumed by Non-Utilities in Sales Area	344	83%
Consumption of Coal Produced in Other Freight Rate Districts in Mining Districts 9, 10 & 11 Mineral Atkinson	70	17%
<b>TOTAL CONSUMPTION BY NON- UTILITIES IN SALES AREA</b>	<b>414</b>	<b>100%</b>

## 3. Springfield Production Sold to Non-Utilities

	<u>Tons Produced (000)</u>	<u>% of Total Production</u>
Sold to Non-Utilities in Sales Area	344	93%
Sold to Greater Chicago Air Quality Control Region	—	—
Sold to Other Non-Utilities	26	7%
<b>TOTAL PRODUCTION SOLD TO NON- UTILITIES FROM MINES IN SPRINGFIELD FRT. DIST.</b>	<b>370</b>	<b>100%</b>

Source: Form 150, Subpoena Questionnaire

# RECAPITULATION OF SALES OF COAL PRODUCED IN THE SPRINGFIELD FREIGHT RATE DISTRICT

## 1. Coal Consumed by All Facilities in Springfield Sales Area

	<u>Tons Consumed (000)</u>	<u>% of Total Consumption</u>
Springfield Production Consumed by All Facilities in Sales Area	1833	96%
Consumption of Coal Produced by Other Freight Rate Districts in Mining Districts 9, 10 & 11 Mineral-Atkinson	70	4%
<b>TOTAL CONSUMPTION OF COAL BY FACILITIES IN SALES AREA</b>	<b>1903</b>	<b>100%</b>

## 2. Springfield Production Sold to All Facilities<sup>1</sup>

	<u>Tons Produced (000)</u>	<u>% of Total Production</u>
Sold to Facilities in Sales Area	1833	19%
Sold to Commonwealth Edison	7584	79%
Sold to Chicago Air Quality Control Region	—	—
Sold to Other Facilities	232	2%
<b>TOTAL</b>	<b>9649</b>	<b>100%</b>

<sup>1</sup> Excludes 92,000 tons of dust shipped from the Crown Mine of Freeman to the Meredosia facility of CIPS. See CIPS Form 150 (Meredosia). Subpoena Questionnaire.

# ANALYSIS OF SALES TO ELECTRIC UTILITIES OF COAL PRODUCED IN BELLEVILLE FREIGHT RATE DISTRICT

## 1. Utility Facilities Located in Belleville Sales Area

Company	Facility	City	County	State
Interstate Power	Dubuque	Dubuque	Dubuque	Iowa
Interstate Power	Lansing	Lansing	Alamakee	Iowa
Dairyland Power	Stoneman	Cassville	Clayton	Wisconsin
Dairyland Power	Alma	Alma	Wabasha	Wisconsin
Wisconsin P & L	Nelson Dewey	Cassville	Clayton	Wisconsin
Northern Sta. Power	King	Stillwater	Washington	Minnesota
Northern Sta. Power	High Bridge	St. Paul	Ramsey	Minnesota
Northern Sta. Power	Black Dog	Minneapolis	Ramsey	Minnesota
Northern Sta. Power	Riverside	Minneapolis	Ramsey	Minnesota
Interstate Power	Kapp	Clinton	Muscatine	Iowa
Municipal Power	Muscatine	Muscatine	Muscatine	Iowa
E. Iowa Light & Power	Montpelier	Montpelier	Muscatine	Iowa
Iowa-Ill. Gas & Elec.	Riverside	Bettendorf	Scott	Iowa
Ill. Power	Wood River	Wood River	Madison	Illinois
Union Electric	Venice	Venice	Madison	Illinois
City of Highland	Highland	Highland	Madison	Illinois
Union Electric	Cahokia	Chaokia	Sinclair	Illinois
Union Electric	Ashley	St. Louis	St. Louis	Missouri
Union Electric	Meramac	St. Louis	St. Louis	Missouri
Central Elec. Power Coop.	Chamois	Chamois	Callaway	Missouri



## 2. Coal Consumption by Utility Facilities Located in Belleville Sales Area

	Tons Consumed (000)	% of Total Consumption
Belleville Production Consumed by Utilities in Sales Area	7446	80%
Consumption of Coal Produced in Other Freight Rate Districts in Mining Districts 9, 10 & 11		
Southern <sup>1</sup>	918	10%
West Kentucky	436	5%
Mineral-Atkinson	429	5%
Springfield <sup>2</sup>	62	1%
	1845	21%
<b>TOTAL CONSUMPTION BY UTILITIES IN SALES AREA</b>	<b>9291</b>	<b>100%*</b>

\* The apparent discrepancy between actual sum of the subtotals above and the total above is due to rounding. Each figure has been rounded to the nearest one percent.

## 3. Belleville Production Sold to Utilities

	Tons Produced (000)	% of Total Production
Sold to Utilities in Sales Area	7446	45%
Sold to Commonwealth Edison	6526	40%
Sold to Greater Chicago Air Quality Control Region	1307	8%
Sold to Other Utilities	1097	7%
<b>TOTAL PRODUCTION SOLD TO UTILITIES BY MINES IN BELLEVILLE FRT. DIST.</b>	<b>16376</b>	<b>100%</b>

<sup>1</sup> Excludes 970,000 tons of dust from mines in the Southern Freight Rate District to the Cahokia, Venice and Meramac facilities of Union Electric, the Alma facility of Dairyland Power and the Wood River facility of Illinois Power. See the corresponding Forms 150, Subpoena Questionnaire.

<sup>2</sup> This is a shipment from the Little Dog Mine in the Springfield Freight Rate District to the Wood River facility of Illinois Power made possible because both mine and plant are local to the Illinois Terminal Railroad. See Beck Dep. Tr., pp. 11-12, 34. No other Springfield District mine is so located.

Source: Form 150, Subpoena Questionnaire

# ANALYSIS OF SALES TO NON-UTILITY FACILITIES OF COAL PRODUCED IN THE BELLEVILLE FREIGHT RATE DISTRICT

## 1. Non-Utility Facilities in Belleville Sales Area

Company	City	County	State
American Oil	Wood River	Madison	Illinois
Alton Box Board	Alton	Madison	Illinois
Shell Oil	Roxanna	Madison	Illinois
Swift & Co.	E. St. Louis	St. Clair	Illinois
Union Starch	Granite City	Madison	Illinois
Chas. Pfizer & Co.	E. St. Louis	St. Clair	Illinois
Monsanto	Sauget	St. Clair	Illinois
Alpha Portland	St. Louis	St. Louis	Missouri
Anheuser Busch	St. Louis	St. Louis	Missouri
Drew Foods	St. Louis	St. Louis	Missouri
Mallinckrodt Chemical	St. Louis	St. Louis	Missouri
Monsanto	St. Louis	St. Louis	Missouri
National Lead	St. Louis	St. Louis	Missouri
Swift & Co.	St. Louis	St. Louis	Missouri

## 2. Coal Consumption by Non-Utility Facilities Located in Belleville Sales Area

	Tons Consumed (000)	% of Total Consumption
Belleville Production Consumed by Non-Utilities in Sales Area	1254	98%
Consumption of Coal Produced in Other Freight Rate Districts in Mining Districts 9, 10 & 11 Springfield <sup>1</sup>	26	2%
<b>TOTAL CONSUMPTION BY NON- UTILITIES IN SALES AREA</b>	<b>1280</b>	<b>100%</b>

<sup>1</sup> This is a shipment from the Little Dog Mine in the Springfield Freight Rate District to the Wood River plant of American Oil made possible because both mine and plant are local to the Illinois Terminal Railroad. See Beck Dep. Tr., pp. 11-12, 34. No other Springfield District mine is so located.

## 3. Belleville Production Sold to Non-Utilities

	Tons Produced (000)	% of Total Production
Sold to Non-Utilities in Sales Area	1254	65%
Sold to Greater Chicago Air Quality Control Region	469	24%
Sold to Other Non-Utilities	220	11%
<b>TOTAL PRODUCTION SOLD TO NON- UTILITIES FROM MINES IN BELLEVILLE FRT. DIST.</b>	<b>1943</b>	<b>100%</b>

Source: Form 150, Subpoena Questionnaire

# RECAPITULATION OF SALES OF COAL PRODUCED IN THE BELLEVILLE FREIGHT RATE DISTRICT

## 1. Coal Consumption by All Facilities in Belleville Sales Area

	Tons Consumed (000)	% of Total Consumption
Belleville Production Consumed by All Facilities in Sales Area	8700	83%
Consumption of Coal Produced in Other Freight Rate Districts in Mining Districts 9, 10 & 11		
Southern Illinois <sup>1</sup>	918	9%
W. Kentucky	436	4%
Mineral-Atkinson	429	4%
Springfield <sup>2</sup>	88 1871	1% 18%
<b>TOTAL CONSUMPTION OF COAL BY FACILITIES IN SALES AREA</b>	<b>10571</b>	<b>100%</b>

## 2. Belleville Production Sold to All Facilities

	Tons Produced (000)	% of Total Production
Sold to Facilities in Sales Area	8700	47%
Sold to Commonwealth Edison	6526	36%
Sold to Chicago Air Quality Control Region	1776	10%
Sold to Other Facilities	1317	7%
<b>TOTAL</b>	<b>18319</b>	<b>100%</b>

<sup>1</sup> Excludes 970,000 tons of dust from mines in the Southern Freight Rate District to the Cahokia, Venice and Meramac facilities of Union Electric, the Alma facility of Dairyland Power and the Wood River facility of Illinois Power. See the corresponding Forms 150, Subpoena Questionnaire.

<sup>2</sup> This tonnage represents shipments of 62,000 tons and 26,000 tons from the Little Dog Mine in the Springfield Freight Rate District to the Wood River Station of Illinois Power and the Wood River plant of American Oil respectively. These transactions were made possible because that mine and both facilities are local to the Illinois Terminal Railroad. See Beck Dep. Tr., pp. 11-12, 34. No other Springfield District mine is so located.

# ANALYSIS OF SALES TO ELECTRIC UTILITIES OF COAL PRODUCED IN SOUTHERN (ILLINOIS) FREIGHT RATE DISTRICT

## 1. Utility Facilities Located in Southern Sales Area

Company	Facility	City	County	State
TVA	Shawnee	Paducah	McCracken	Kentucky
Wisc. P & L	Edgewater	Sheboygan	Sheboygan	Wisconsin
Wisc. E. P.	Port Washington	Port Washington	Ozaukee	Wisconsin
Wisc. E. P.	Oak Creek	Oak Creek	Milwaukee	Wisconsin
Wisc. E. P.	Lakeside	St. Francis	Milwaukee	Wisconsin
Wisc. Pub. Serv.	Weston	Green Bay	Brown	Wisconsin
Wisc. Pub. Serv.	Pulliam	Rothschild	Marathon	Wisconsin
Marshfield E&W	Wildwood	Marshfield	Wood	Wisconsin
Menasha E&W	Menasha	Menasha	Winnebago	Wisconsin
Electric Energy	Joppa	Joppa	Massac	Illinois
CIPS	Grand Tower	Grand Tower	Jackson	Illinois
So. Ill. Pow. Coop.	Marion	Marion	Williamson	Illinois
Union Electric	Sioux	W. Alton	St. Charles	Illinois
N.E. Mo. E. Pwr. Coop.	South River	Palmyra	Marion	Missouri
Ia. E.L.&P.	Sutherland	Marshalltown	Marshall	Missouri
Ia. Pub. Serv.	Maynard	Waterloo	Black	Iowa
Ia. Pub. Serv.	Sixth St. Station	Cedar Rapids	Linn	Iowa

## 2. Coal Consumption by Utility Facilities Located in Southern Sales Area

	Tons Consumed (000)	% of Total Consumption
Southern Production Consumed by Utilities in Sales Area	7987	53%
Consumption of Coal Produced in Other Freight Rate Districts in Mining Districts 9, 10 & 11		
West Kentucky	5704	38%
Belleville <sup>1</sup>	556	4%
Mineral-Atkinson	530	3%
Indiana	255	1%
Murdock	92	1%
Springfield	34	—
<b>TOTAL</b>	<b>15158</b>	<b>47%</b>

## 3. Southern Production Sold to Utilities

	Tons Produced (000)	% of Total Production
Sold to Utilities in Sales Area	7987	81%
Sold to Commonwealth Edison	187	1%
Sold to Other Utilities *	1714	17%
<b>TOTAL PRODUCTION SOLD TO UTILITIES BY MINES IN SOUTHERN FRT. DIST.</b>	<b>9888</b>	<b>100%</b>

<sup>1</sup> Includes 265,000 tons (2%) from the Fidelity Mine of United Electric to the Shawnee plant of TVA in Paducah, Kentucky, shipped under a Freeman contract. In response to Form 150 of the Subpoena Questionnaire TVA received no other Belleville Freight District coal. In response to the Government Questionnaire, no other Belleville producer reported sales to TVA. See also, Nugent Dep., Tr. p. 235.

\* Excludes 970,000 tons of dust from various Southern mines to Belleville sales area utilities. See Footnote 1, Table D-1B.

Source: Form 150, Subpoena Questionnaire.



# ANALYSIS OF SALES TO NON-UTILITY FACILITIES OF COAL PRODUCED IN THE SOUTHERN (ILLINOIS) FREIGHT RATE DISTRICT<sup>1</sup>

## 1. Non-Utility Facilities in the Southern Sales Area

Company	City	County	State
Northwest. States Port. Cmt.	Mason City	Cerro Gordo	Iowa
Amer. Crystal Sugar	Mason City	Cerro Gordo	Iowa
Lehigh Port. Cmt.	Mason City	Cerro Gordo	Iowa
Univ. of Iowa	Iowa City	Johnson	Iowa
Deere and Company	Waterloo	Black	Iowa
Penick & Ford, Ltd.	Cedar Rapids	Linn	Iowa
American Motors	Kenosha	Kenosha	Wisconsin
U.S. Glue	Oak Creek	Milwaukee	Wisconsin
Marquette Cement	Milwaukee	Milwaukee	Wisconsin
Allis-Chalmers	W. Allis	Milwaukee	Wisconsin
Thilmany Pulp & Paper	Kaukauna	Outagamie	Wisconsin
Scott Paper	Marinette	Marinette	Wisconsin
Medusa Port. Cmt.	Manitowoc	Manitowoc	Wisconsin
American Can	Green Bay	Brown	Wisconsin
American Can	Rothschild	Marathon	Wisconsin
Consol. Papers	Wisconsin Rapids	Wood	Wisconsin
Mosinee Paper Mills	Mosinee	Marathon	Wisconsin
Nekoosa Edwards Paper	Pt. Edwards	Wood	Wisconsin
Owens-Illinois	Tomahawk	Lincoln	Wisconsin
St. Regis Paper	Rhineland	Oneida	Wisconsin
Hercules, Inc.	Louisiana	Pike	Missouri
Dundee Cement	Clarksville	Pike	Missouri
U.S. Steel	Hannibal	Marion	Missouri
Miss. Lime	Ste. Genevieve	Ste. Genevieve	Missouri
Marquette Cement	Cape Girardeau	Cape Girardeau	Missouri

<sup>1</sup> Excluding sales of 1,437,000 tons of metallurgical coal.

## 2. Coal Consumption by Non-Utility Facilities Located in Southern Sales Area

	<u>Tons Consumed (000)</u>	<u>% of Total Consumption</u>
<b>Southern Production Consumed by Non-Utilities in Sales Area</b>	1627	76%
<b>Consumption of Coal Produced in Other Freight Rate Districts in Mining Districts 9, 10 &amp; 11</b>		
Indiana	261	12%
West Kentucky	150	7%
Mineral-Atkinson	54	3%
Fulton-Peoria	28	1%
Belleville	21	1%
	514	24%
<b>TOTAL CONSUMPTION BY NON-UTILITIES IN SALES AREA</b>	2141	100%

## 3. Southern Production Sold to Non-Utilities

	<u>Tons Produced (000)</u>	<u>% of Total Production</u>
<b>Sold to Non-Utilities in Sales Area</b>	1627	55%
<b>Sold to Greater Chicago Air Quality Control Region</b>	966	33%
<b>Sold to Other Non-Utilities</b>	362	12%
<b>TOTAL PRODUCTION SOLD TO NON- UTILITIES FROM MINES IN SOUTHERN FRT. DIST.</b>	2955	100%

Source: Form 150, Subpoena Questionnaire.

# RECAPITULATION OF SALES OF COAL PRODUCED IN THE SOUTHERN FREIGHT RATE DISTRICT

## 1. Coal Consumption by All Facilities in Southern Sales Area

	Tons Consumed (000)	% of Total Consumption
Southern Production Consumed by All Facilities in Sales Area <sup>1</sup>	9614	56%
Consumption of Coal Produced in Other Freight Rate Districts in Mining Districts 9, 10 & 11		
West Kentucky	5854	34%
Mineral-Atkinson	584	3
Belleville <sup>2</sup>	577	3
Indiana	516	3
Murdock	92	1
Springfield	34	—
Fulton-Peoria	28	—
	7685	44%
<b>TOTAL CONSUMPTION OF COAL BY FACILITIES IN SALES AREA</b>	<b>17299</b>	<b>100%</b>

## 2. Southern Production Sold to All Facilities

	Tons Produced (000)	% of Total Production
Sold to Facilities in Sales Area	9614	75%
Sold to Commonwealth Edison	137	1
Sold to Chicago Air Quality Control Region	966	8
Sold to Other Facilities <sup>3</sup>	2076	16
<b>TOTAL</b>	<b>12793</b>	<b>100%</b>

<sup>1</sup> Excluding sales of 1,437,000 tons of metallurgical coal.

<sup>2</sup> Includes 265,000 tons (2%) from the Fidelity Mine of United Electric to the Shawnee plant of TVA in Paducah, Kentucky, shipped under a Freeman contract. In response to Form 150 of the Subpoena Questionnaire TVA received no other Belleville Freight District coal. In response to the Government Questionnaire, no other Belleville producer reported sales to TVA. See also, Nugent Dep., Tr. p. 235.

<sup>3</sup> Excludes 970,000 tons of dust from various Southern mines to Belleville sales area utilities. See Footnote 1, Table D-1B.

# SALE OF COAL TO FACILITIES LOCATED IN THE METROPOLITAN CHICAGO AIR QUALITY CONTROL REGION<sup>1</sup>

## 1. Facilities Located in Chicago Air Quality Control Region

Company		County
Abbott Laboratories	N. Chicago	Lake (Ill.)
American Maize	Hammond	Lake (Ind.)
Argonne	Near Lemont	Du Page
Armour	Montgomery	Kane
Armour	McCook	Cook
Automatic Electric	Northlake	Cook
Campbell Soup	Chicago	Cook
Caterpillar	Aurora	Kane
Caterpillar	Joliet	Will
Celotex	Chicago	Cook
Central Soya	Chicago	Cook
Container Corp.	Chicago	Cook
Container Corp. <sup>2</sup>	Chicago	Cook
Corn Prod.	Argo	Cook
Darling	Chicago	Cook
Darling	Chicago	Cook
Army Ammunitions	Joliet	Will
Wyman Gordon	Harvey	Cook
Inland Steel	E. Chicago	Lake (Ind.)
Interlake	Riverdale	Cook
Interlake	Chicago	Cook
Int'l. Harvester	Melrose Park	Cook
Int'l. Harvester	Chicago	Cook
Int'l. Harvester	Chicago	Cook
Metro. San. Dist.	Cicero	Cook
Northwestern U.	Evanston	Cook
Nipso	Gary	Lake (Ind.)
Olin Mathieson	Joliet	Will
Procter & Gamble	Chicago	Cook
GAF Corp. (Rubberoid)	Joliet	Will
Sherwin-Williams	Chicago	Cook
Standard Lime	LaGrange	Cook
Swift	Chicago	Cook
Union Carbide	E. Chicago	Lake (Ind.)
Union Carbide	Whiting	Lake (Ind.)
U. S. Navy	N. Chicago	Lake (Ill.)
U. S. Steel	Gary	Lake (Ind.)
U. S. Steel	Gary	Lake (Ind.)
U. S. Steel	Chicago	Cook
Western Electric	E. Chicago	Lake (Ind.)
Youngstown		

<sup>1</sup> The Metropolitan Chicago Interstate Air Quality Control Region, as designated 42 C.F.R. § 81.14 (33 F. R. 17176, Nov. 20, 1968), consists of Lake, McHenry, Cook, Du Page, Kane and Will Counties in Illinois and Lake and Porter Counties in Indiana. Tonnage to Commonwealth Edison facilities has not been included.

## 2. Coal Consumption by Facilities Located in Chicago Air Quality Control Region

	Tons Consumed (000)	% of Total Consumption
<b>FROM FREIGHT RATE DISTRICT:</b>		
Southern	966	20%
Fulton-Peoria	586	12
Belleville	1776	36
Springfield	—	—
	3328	67
Northern Illinois	465	10
Indiana	1089	22
West Kentucky	56	1
<b>TOTAL CONSUMPTION</b>	<b>4938</b>	<b>100%</b>

Source: Form 150, Subpoena Questionnaire.